Innocenti

OCCASIONAL PAPERS

Economic and Social Policy Series

EPS 65

Accounting for the Family: The Treatment of Marriage and Children in European Income Tax Systems

Cathal O'Donoghue and Holly Sutherland

United Nations Children's Fund
International Child Development Centre
Florence - Italy
1998

Innocenti Occasional Papers
ECONOMIC AND SOCIAL POLICY SERIES no. 65

Accounting for the Family: The Treatment of Marriage and Children in European Income Tax Systems

CATHAL O'DONOGHUE AND HOLLY SUTHERLAND*

September 1998

*Microsimulation Unit, Department of Applied Economics, University of Cambridge, UK

Acknowledgements

The authors are grateful to the UNICEF International Child Development Centre for financial support, to John Micklewright for his guidance and constructive comments and to Robert Zimmermann for editing. Much of the material on individual countries of the European Union is derived from information collected during the Euromod preparatory project (Sutherland 1997a). This was supported by the European Commission Targeted Socioeconomic Research programme (CT95-3009). Thanks are due to country respondents who participated in that project: Paolo Bosi, François Bourguignon, Tim Callan, Hardy Hanappi, Hans Hansen, Anders Klevmarken, Jacques Lecacheux, Magda Mercader-Prats, Danièle Meulders, Carlos Farinha Rodrigues, Nicola Rossi, Aino Salomäki, Panos Tsakloglou, Koen Vleminckx, Klaas De Vos, Gert Wagner, Walter Wolf and their colleagues. Thanks are also due to Bruce Bradbury, Maria Laura Di Tommaso, Frank Wilkinson and participants at the Economic and Social Research Council (ESRC) seminar, "The Economics of Equal Opportunity", in Manchester in February 1998 for comments. The usual disclaimer applies.

Data from the Family Expenditure Survey are Crown Copyright. They have been made available by the Office for National Statistics (ONS) through the Data Archive and are used by permission. Neither the ONS nor the Data Archive bear any responsibility for the analysis or interpretation of the data reported here. Polimod is the tax-benefit microsimulation model constructed by the Microsimulation Unit in the Department of Applied Economics at the University of Cambridge, originally funded by the ESRC (R000 23 3257).

The opinions expressed in this publication
are those of the authors and do not necessarily
reflect the policies or views of UNICEF

Copyright © UNICEF, 1998

Cover design: Bernard Chazine

Printed by: Arti Grafiche Ticci - Sovicille (Siena), Italy

ISSN 1014-7837

Readers wishing to cite this document are asked to use the following form of words:

O'Donoghue, Cathal and Holly Sutherland (1998), 'Accounting for the Family: The Treatment of Marriage and Children in European Income Tax Systems'. Innocenti Occasional Papers, Economic and Social Policy Series, no. 65. Florence: UNICEF International Child Development Centre.

Executive Summary

In some countries family status has little or no impact on the amount of tax that an individual pays. In others the income tax system plays a major role in the redistribution of income among families of different types. The question this paper addresses is whether, out of the wide range of practices in Western Europe, there are tax arrangements which are particularly family friendly. Are there existing tax systems which perform well in terms of the welfare of families and, especially, of children and which could be used as blueprints for the design of new systems? Failing that, are there lessons about the advantages and disadvantages of alternative approaches that we can learn through an understanding of the effects of tax instruments in existing systems?

Tax systems are expected to achieve many things and in practice have to reconcile conflicting aims, most notably in this context the wish to support the traditional family, while ensuring equality of treatment among individuals in different circumstances. In evaluating the success of different approaches in achieving the appropriate level of support to families, we are hampered by the absence of any universally accepted notion of a "neutral" tax system. In addition, there is no consensus about the desirable size of any concession for a child or children or how it should relate to family income. We do not take a view in these areas of ambiguity about equity. Instead, we focus on the implications of each approach to policy for horizontal and vertical redistribution.

We review the main features of the current systems in the 15 European Union countries and categorize them into four distinct types: (i) those with independent taxation of couples and few family instruments within the income tax system, (ii) those with independent taxation, combined with family-related instruments such as credits or allowances for children, marriage or lone parenthood, (iii) systems with optional joint taxation and (iv) systems with mandatory joint taxation. However, the striking feature of our survey is the wide variety of instruments and combinations of them in use. An understanding of the relative tax burdens of families of different types needs to consider not only allowances for children and the form of taxation of the couple, but also such mechanisms as reliefs on family-related expenditure and income sources. Indeed, the distinction between a tax expenditure and a cash transfer payment can be blurred, and, although the focus of this paper is income tax, it should be remembered that in many countries social welfare systems play a complementary – or even a major – role in accounting for the needs of children.

To establish the extent of the redistribution accomplished by a tax system, we need to look further than the existence of family-related instruments. We also need to take account of the size of the income tax system, the relative

value of tax concessions for families and the characteristics of the population and the income distribution on which the tax is levied. In order to evaluate the effect of some alternative tax instruments, we carry out a microsimulation exercise using UK household data as a base to explore the implications for the UK population of stylized family tax arrangements “borrowed” from other countries. We consider five types of concessions to couples: two based on independent tax systems and three based on joint taxation. We compare their effects on families with children with the effects of two alternative methods of directly targeting children – as distinct from couples or families – through the tax system. We arrive at the following conclusions.

- There is a clear tradeoff between, on the one hand, tax concessions for couples in which one spouse is financially dependent and, on the other, damage to the work incentives of the dependent spouse. Thus, joint taxation systems perform relatively well on interfamily distributional grounds and tend to lower the marginal rate of tax of the higher earner, but this occurs at the expence of an increase in the marginal rate of the lower earner.

- Tax systems which offer concessions to couples tend also to benefit families with children disproportionately. The extent of this effect – both its size and its incidence – depends on the form of the concession. The version of the Spanish system of aggregate taxation that we model for the UK is very effective at targeting children, but this is because it claws back tax from high-income couples (who have relatively few children in the UK) and especially benefits couples in the middle of the income distribution (where there is a concentration of UK children). The French family quotient includes a generous factor for children that particularly favours higher income families with children. The transferable allowances in the Netherlands are less well targeted on families with children because they benefit one-earner couples, and in the UK children tend to be concentrated in families with two earners.

- Tax concessions directly focused on children are a more efficient way of targeting children than are those concessions aimed at couples, but the form of the concession has a major impact on the distributional goals it can accomplish. Thus, child tax allowances delivered through the UK tax system would not reach one-quarter of the families with children with incomes below the tax threshold, and their value would increase with income. On the other hand, a universal child benefit is capable of delivering resources to all children. On a proportional basis the increase in income is greater for poorer children, but a flat rate child benefit cannot maintain horizontal equity at all income levels.

● The progressivity of the income tax schedule increases the distributional effects of joint taxation and allowances for children. Thus, under a more progressive tax structure not only do these instruments generally cost more, but they are of greater proportional benefit to higher income taxpayers.

● On the assumption that child welfare is likely to be best served by boosting the resources of mothers, we can draw the following conclusions.

i. Couples should be taxed independently, or, if taxation is joint, it should be administered so as to deduct no more tax from the mother than would be the case if she were the main or sole earner.

ii. Child concessions should be paid to the main carer (mainly the mother) in the first instance. Tax allowances which are not refundable can only be of use to the family if the person to whom they are allocated has sufficient taxable income to set against them. Thus, under joint taxation the family as a whole may benefit, but the cash is likely to be channelled through the father's income. Under independent taxation the family will benefit to the greatest degree if the parent to whom the allowance is allocated has the higher income or if the allowance is transferable between spouses.

iii. However, transferability – of adult allowances or child allowances – has adverse effects on the work incentives of the lower income spouse.

iv. In the case of child benefits (or allowances and credits which are refundable to non-taxpayers), payment to the mother does not compromise the positive impact on family incomes.

Abstract

This paper examines the treatment of the family in European tax systems. It surveys the various instruments which are used to take account of marriage and the presence of children and describes the current systems in the 15 European Union countries. Tax systems are expected to achieve many things, and the paper discusses the tradeoffs involved in attempting to reconcile conflicting aims, with a particular focus on the impact of the various approaches on the welfare of children. The impact of alternative policies on the taxes paid by families of different types and on the work incentives of individuals in different family situations is examined for the UK.

Keywords: Income Tax, European Union, Family, Income Distribution
JEL classification: C81, D31, H20, I30

1. Introduction

There is great variation in the treatment of the family in income tax systems across Europe. In some countries family status has little or no impact on the amount of tax that an individual pays. In others the income tax system plays a major role in the redistribution of income among families of different types. The question this paper addresses is whether, in the wide range of practices in Western Europe, there are tax arrangements which are particularly family friendly. Are there existing tax systems which perform well in terms of the welfare of families and especially of children and which could be used as blueprints for the design of new systems? Failing that, are there lessons about the advantages and disadvantages of alternative approaches that we can learn from an understanding of the effects of tax instruments in existing systems?

The paper begins by reviewing the issues involved in assessing the relative impacts of tax systems on families of different types. Tax systems are expected to achieve many things, and Section 2 includes a discussion of the tradeoffs involved in attempting to reconcile conflicting aims. Income tax does not operate in isolation, and Section 3 explains how the rest of the tax and social welfare system may play a complementary role. It describes how the impact of the tax system has to be viewed in the context of its relative importance to government revenue and the characteristics of the population and the distribution of incomes on which it is levied. Section 4 surveys the main features of the current systems in the 15 European Union countries and attempts to categorize them into distinct types. The terminology used is explained in Annexe 1.

Many comparisons of tax systems use calculated tax burdens on hypothet-

ical family types to contrast the effects of different systems. This sort of study can provide valuable insights into particular features of tax systems. However, a comparison of "model" families does not do justice to the wide variation in family circumstances and does not provide any guide to the relative importance of each effect. To do this, it is necessary to make use of the information on actual families provided in datasets which are representative of the population. In Section 5 we describe a microsimulation exercise using UK household data as a base to explore the implications for the UK population of stylized family tax arrangements "borrowed" from other countries. In Section 6 we report the results of these simulations and discuss the impact of alternative methods of accounting for marriage on family incomes and on the incentives to work of men and women in couples. That section also examines various methods of accounting for children themselves in the tax system, contrasting their effects on families with children with those of measures aimed at families more generally. Section 7 concludes.

2. Income Tax and Horizontal Equity

Income tax systems can affect the welfare of children in a number of distinct ways. First, some children have income of their own; this may be taxed on an individual basis or may be included in the taxation of the incomes of the parents. Second, parents may be allocated tax concessions of one kind or another because they have children. A third, less direct mechanism is through the tax treatment of couples and especially of married women.

The first mechanism is relatively unimportant in most EU countries, where the children considered dependent on their parents by the tax system tend to have minimal taxable incomes. This paper focuses mainly on the second and third mechanisms. The principles which might guide the design of these mechanisms and which might also provide a framework for the analysis of actual tax systems are now considered in turn.

■ 2.1 *Income tax and children*

The main effect of tax concessions related directly to children is to redistribute income from childless taxpayers to families with children. The key issue, besides the *size* of the concession, is the *form* of the concession, whether it is an allowance, a credit, a refundable credit, or a quotient which reduces the effective size of the taxable income of the parents.[1] This will have an impact

[1] See Annexe 1 for an explanation of these terms.

on the vertical distribution among families with children and the horizontal distribution among families of different compositions. Tax concessions may operate as complements to or as substitutes for cash transfers to families with children. They can be designed particularly to benefit large families or small ones, young children or older ones.

On the whole, where the objective is to maintain horizontal equity throughout the income distribution, then tax allowances are a preferred mechanism because the value of the concession increases with income (in a progressive tax structure).[2] At the other extreme, if the aim is to target resources at the poorest children, then the value of the concession will be designed to be largest at the lowest incomes. One way of achieving this is to apply a separate means test to a cash transfer. Another option is to have a uniform child benefit which is funded by a progressive tax system. A third way, which does use the tax system as a method of delivery, is to introduce a credit (through the tax system) which is withdrawn as income rises, but which is refundable in cash to non-taxpayers. In each of these examples, the benefit is more sharply targeted the greater the withdrawal rate(s) or the tax rate(s). Thus, the concession may be withdrawn from the rich rather than targeted on the poor.

However, one aspect of the design of the system can modify these general statements in crucial ways. The impact on child welfare of tax concessions and state transfers for children also depends on the form of tax administration and in particular on the person in the family who actually receives the concession. There is evidence that the distribution of resources within the family is not always equitable and that resources in the hands of mothers tend to benefit children.[3] On this basis, channelling concessions intended to improve the welfare of children through the tax system is more likely to be effective if the concessions have a direct impact on the incomes of mothers. This is more straightforward under independent taxation, since, under joint taxation, concessions tend to fall automatically on the higher earner (see Annexe 1).

A system based on independent taxation and concessions directed towards children focuses on the needs of children per se and on gender equality. This type of approach is taken by the Nordic countries and to some extent the UK. In contrast, the approach taken by France and to a lesser extent Belgium and Luxembourg is to focus on supporting the traditional family (Ruxton 1996). The following section considers the issues involved in comparing the tax treatments of the family in different countries.

[2] Annexe 1 explains how this happens.

[3] See Goode, Callender and Lister (1998) and Lundberg, Pollak and Wales (1997).

■ 2.2 *Income tax, women and the family*

There is no single definition of horizontal equity – fairness in the tax treatment of people in different circumstances – against which to measure actual practice in European countries. On the one hand, a tax system may be considered "fair" if all *individuals* are treated in the same way. On the other hand, we may wish to think of the *family* as a unit containing several individuals with needs and resources in common, and in this case we could consider as equitable a system in which tax is paid according to the unit's combined taxable capacity. This depends on income, but also on some assessment of need. Then, individuals with dependent children, for example, would pay less tax than would those individuals on the same incomes without children. Taking this further, we might define a tax system as horizontally equitable if families with the same equivalized pre-tax income have the same equivalent income (and living standard) after the deduction of taxes.[4] Leaving aside the exact nature of the equivalence scale, it is clear that all criteria for fairness cannot be met in one system. It is argued that couples should pay less tax than single people because they have greater needs, but at the same time one can argue that single people should be compensated for their lack of consumption economies. Furthermore, the costs of two people working to earn a given level of income are generally greater than the costs of one person earning the same income. This suggests that two-earner couples should pay less tax than should a one-earner couple with the same income.[5] However, this argument does not recognize the extra needs of a dependent spouse in the case of one-earner couples.

The tension between these conflicting objectives is a recurrent theme in debates about tax policy and the family, including debates at the level of the European Union. In the mid-1980s the European Parliament recommended that "the tax system should be neutral as between the married couple where only one partner is in paid employment and the married couple where both partners are in paid employment, with a mandatory system of independent taxation for husband and wife as the long-term objective" (as quoted in House of Lords 1985, page 15).

As noted in the Commentary provided by the House of Lords Select Committee on the European Communities,

"'Neutral' is here presumably intended to mean that one-earner and two-earner couples with the same total income should in principle pay the same tax. However, such neutrality can be guaran-

[4] To equivalize, family incomes are adjusted to take account of the greater needs of larger families, together with the consumption economies which result from sharing. Thus, in order to maintain the same living standard a couple is (typically) assumed to require less income than two single people, but more income than one person.

[5] See Department of Social Security (1988).

teed only under an *aggregate* taxation system. With *independent* taxation, the total tax depends on how the earnings are split. There thus appears to be a contradiction between the first part of the recommendation and the second." (House of Lords 1985, page 15; emphasis added)

They conclude by succinctly summarizing the central problem. "These differences reflect the problem of reconciling conflicting aims, on the one hand, the desire, which still strongly exists, to recognize and support traditional family life and, on the other, the desire to see strict equality of treatment between men and women, married or unmarried" (House of Lords 1985, page 16).

At the heart of the "traditional family" model is the assumed financial dependency of one spouse on the other. If the non-participation and lower earnings of women were related solely and directly to childbirth and childrearing, then tax concessions targeted on children would bring us to the "neutral" point under both sets of criteria discussed above. However, women's role as mothers also has an indirect effect on their lifetime ability to support themselves through labour market activity, including at times when no children are dependent on them. Clearly, the situation varies among countries, but in many the actual or assumed dependency of married women is recognized to some extent in the tax system. The choice of a benchmark where we consider the system to be neutral depends on our views about whether it is desirable for women (who might be mothers) to be financially dependent on their partners, as well as whether they are dependent in fact.

Another area where it is problematic to define "neutrality" is in the tax treatment of lone parents. While the unit of assessment is not an issue, a neutral approach to the relative generosity of the system to lone parents compared with one-earner couples with children is not obvious. On the one hand, lone parents do not have to support financially other adults dependent on them, suggesting that they should be treated less generously. On the other hand, they do not have the non-financial support of a partner, something for which the tax system might arguably compensate. Bradshaw et al. (1996) find wide variation in the taxes paid by the two groups in 20 countries, reflecting large differences in the prevalence of lone parenthood, in the effectiveness of maintenance systems and in the employment of lone parents, as well as in the prevalence of a lack of consensus about the role of the tax system in the support of families of different types.

One of the general concerns about tax concessions is that they may have undesirable distortionary effects. In general, high marginal tax rates may reduce the incentive to earn income or encourage the avoidance or evasion of taxes. The reduction in the total tax collected because of the granting of concessions to couples or families with children results in higher marginal rates. For example, the financing of a child tax allowance equal to one-third of the

value of the single allowance in the UK would require a one percentage point increase in income tax rates.[6]

Furthermore, specific concessions may affect the incentives of particular groups. One of the main objections for giving extra allowances to one-earner couples, for example, or for the aggregation of unequal earnings of spouses is that this increases marginal rates for the second earner, thereby lowering the incentives of the non-earners or lower earners to participate in the workforce or to increase earnings. There is a tradeoff between using the income tax system for horizontal redistribution among families and ensuring that the individual incentives to work (particularly among the women in couples) are not damaged.

■ 2.3 *Choice within the tax system*

One explanation for so much diversity in the taxation of the family among European countries is that the systems are attempting to find their own solutions to the conflicting notions of "neutrality". In some countries a compromise is reached that allows the authorities to avoid being criticized on the grounds of gender discrimination or of undermining the traditional family. This involves offering couples the choice between joint and independent taxation. Thus, better-off, two-earner couples can opt for the advantages of independent taxation (such as privacy and autonomy in financial affairs), and lower income one-earner couples can benefit from the advantages of income pooling. The specific financial advantages of the two options depend on the details of the tax system, but in general it is assumed that couples will choose the regime which is financially beneficial to them. However, the most advantageous choice for the couple may not be the best option for each partner. Whether or not there is actually conflict between husbands and wives, offering choice makes the resolution of the conflicting aims of tax systems a private affair. This in turn has the potential of introducing problems of non-take-up (the couple may make the wrong choice from any perspective), increased compliance costs (for the family) and administrative costs (for the tax authorities), and increased unfairness among families (if the better-off can afford better advice), as well as increased inequality within families.

To conclude, it is an interesting question whether the interests of children are best served by supporting the traditional family through the tax system or by the equal treatment of parents, regardless of gender or marital status. As far as this paper is concerned, it is a question that is left open. In Sections 5 and 6 we explore the effects of different systems on the incomes of families of different

[6] This is the case if the tax allowance is set against the income of the high earner in a couple. See Section 6 for more details about this calculation.

types. One underlying principle which we accept without question is that redistribution towards families with children is likely to lead to an improvement in child welfare. We show the implications of different approaches for the extent of vertical redistribution, for the treatment of couples and for the tradeoff between family income and individual incentives. We hope that readers will draw their own conclusions about the most *desirable* outcomes in these respects.

3. Income Tax in Perspective

In some countries income tax is primarily a revenue-raising instrument. Allowance for the needs of dependants is achieved, for example, through cash transfers for children and through additions to social security payments to account for these needs. Targeted public expenditure may also be seen as a complementary route to the achievement of horizontal equity. Ideally, in order to understand the cumulative effects of all parts of the system, one should analyse the system as a whole, with a view to elucidating the complementarities and interactions between cash and in-kind payments and direct and indirect tax burdens. However, in this paper we focus only on income tax in order to clarify the role of one part of the system. In doing this comparatively, we need to remember, first, that the importance of income taxation itself influences the absolute size of the effect which tax instruments can have on incomes, second, that the other parts of the tax-benefit system may interact with income tax or may play a complementary role, and, third, that the actual impact of a particular system depends on the underlying structure of the population in question. These points are discussed in turn below.

■ 3.1 *The importance of income tax*

The amount of revenue that needs to be raised through taxation depends on the size of the public sector, together with the amount borrowed and any debt repayments. Direct taxation on incomes is just one way in which revenue may be raised. Other sources include social security contributions, taxes on expenditure and wealth, property taxes and business taxes. The average income tax rate is one indicator of the total size of income taxes and the relative importance of this source of government revenue to personal incomes. However, this also depends crucially on the size of the effective tax base. This is reduced by exemptions and reliefs such as those for social security contributions, health and pension expenditures and business losses and expences, together with tax evasion.[7]

[7] For example, Bernardi (1989) estimates that 50 percent of self-employment income in Italy is not declared to the tax authorities.

Table 1 compares selected indicators of the importance of income tax in each of the EU countries. It is clear that there is great disparity among countries in the size of the income tax system. This is the case when the income tax is measured as a proportion of household sector disposable income, as a proportion of GDP, and as a proportion of total tax revenue. Income tax as a percentage of GDP varies from 2.8 percent in Greece to 27.3 percent in Denmark. In general, the Nordic countries have the highest levels of income taxation, and the Mediterranean countries have the lowest. Tax revenues as a whole are not as variable (in relation to GDP) as income tax. Thus, countries with "small" income tax systems, such as Greece and France, tend to rely more heavily on other sources of revenue. In these two countries income taxes make up only 10.7 and 12 percent of total taxation, respectively, compared with 51 percent in Denmark, which has the highest proportion of income tax in total revenue. In most of the remaining countries, income taxes make up between one-fifth and one-third of total tax revenues.

Table 1: *The importance of income tax to incomes and total taxation*

	Income tax (% disposable income)[a]	Income tax (% GDP)[b]	Income tax (% total tax)[b]
Austria (1995)	17.6	12.3	28.9
Belgium (1995)	19.3	15.7	32.5
Denmark (1995)	52.3	27.3	53.2
Finland (1995)	24.9	15.0	31.9
France (1995)	7.1	5.2	12.0
Germany (1994)	13.9	9.6	21.3
Greece (1994)	4.5	2.8	10.7
Ireland			
Italy (1995)	14.8	11.5	29.1
Luxembourg			
Netherlands (1995)	13.0	9.6	21.2
Portugal (1993)	8.4	7.1	20.6
Spain (1995)	12.2	9.2	28.1
Sweden (1995)	29.5	18.6	36.8
UK (1994)	14.0	9.9	29.7

Notes: a. These figures are based on Table 8 in OECD (1997), the income and outlay account for each country, where total disposable income is equal to row 20, less row 4, less row 31. Spaces are left blank in cases where the information is missing in the national accounts. b. Total tax refers to all direct and indirect taxes and social contributions collected at all levels of government.

Source: OECD (1997), Tables 6, 6.1 and 8.

A country with a relatively small income tax system will only be able to use that system to accomplish a small amount of redistribution. In this sense, the tax treatment of Danish families has a potentially much larger impact on the living standards of these families than the Greek system has on Greek family incomes. However, from the perspective of the fairness of the tax system – the distribution of shares of the income tax burden on families or individuals of different types – it is the structure rather than the size of the system that matters.

■ 3.2 *Income tax and the rest of the system*

The size of income taxation affects the scale of the redistribution that is possible, but the tax structure is also important. If the structure is characterized by a smaller base and higher marginal rates, then larger proportions of the population will not be paying income taxes. In this situation the scope for using the tax system as a mechanism for horizontal redistribution is limited to that part of the population that is within the system. Targeting resources on low-income families must be accomplished by other means, or the *integration* of the tax and benefit systems can be considered. Refundable tax credits are one form of integration. If they depend on status alone, they are equivalent, in distributional terms, to a universal cash benefit. However, the method of administration and the means of delivery of these resources may also determine their effectiveness. A distinction can be made between systems which are *automatic* and those in which concessions or entitlements must be *claimed*. If, during times when income is low, a tax refund must be claimed, then this system may be less effective than a cash payment which is made regardless of income or status. Systems which can be made automatic may not only reduce the problems of non-takeup, but they may also reduce administrative costs and the likelihood of fraud.

In many countries, of course, while the tax and benefit systems are not formally integrated, they operate in a complementary manner in the sense that they operate alongside each other and may interact (for example, the child benefit may be taxable). Thus, it is important to remember that our focus on income tax provides only a partial picture of the instruments which are used in EU countries to support the family or to redistribute resources towards children.

Besides the nature of the tax schedule, other features of the national income tax system and the rest of the tax-benefit system with which it interacts will modify the impact of "horizontal" instruments. For example, the impact of taxing the incomes of children jointly with those of parents will depend on the definition of a "child" within the system. In some countries, unmarried children as old as 30 might be included, implying a very different effect than if

children are assumed to be only those young people still in secondary school (and unlikely to have significant incomes).[8] Similarly, the significance of offering tax relief on school tuition fees will depend on the prevalence of private education.

■ 3.3 *Income tax and the composition of the tax base*

Family structures and employment patterns can vary substantially among countries. In carrying out a study of family obligations, Millar and Warman (1996) have developed a three-part model of family types in Europe: Scandinavian-Anglo, Mediterranean-Ireland and Central. The Scandinavian-Anglo model is characterized by high rates of cohabitation and divorce, a very high proportion of extramarital births, relatively high fertility (except for Britain) and large numbers of people living alone. The labour force participation rate of married women tends to be much higher in these countries than it is in the other groups. The Mediterranean model, on the other hand, tends to have very low cohabitation rates, low divorce, low extramarital birth rates, small numbers of people living alone, low married female participation rates and relatively low birth rates (except Ireland). Central countries in general fall between these first two groups, with marriage rates generally higher than in northern countries and lower than in southern countries, with the reverse the case for cohabitation rates. Divorce is not as prevalent as in the north, but more so than in the south, and in general birth rates are higher than those in the south and lower than those in the north. The proportion of single-person households is similar to that in the north, and female participation rates are similar to those in Mediterranean countries.

Existing national tax systems can be seen as reflecting underlying social structures. Countries with low female participation rates and stable marriages tend to assume financial dependency within couples and to target tax concessions on one-earner couples. Countries with high female participation and high rates of cohabitation and divorce are more likely to assume individual financial autonomy and to favour independent taxation. Of course, this is not uniformly the case, nor is it necessarily true that the development of national tax systems always keeps pace with social and economic change. This reality will determine the effect of the tax system on current incomes and incentives, whether or not the assumptions behind current tax systems reflect what is actually happening. Underlying factors such as rates of marriage and divorce, fertility and labour participation, together with the distribution of earnings and unemployment, will

[8] Annexe 2 outlines the dependency definitions in use in European income tax systems.

affect the share of total taxable income that is earned by couples and the position of couples and children in the overall income distribution. In turn, this will determine the amount of redistribution that the tax system must achieve if particular goals in terms of the living standards of families with children are to be realized.

In conclusion, it is clear that many factors must be taken into account in any comparison of the effect of tax systems and in any evaluation of their treatment of the family and their impact on the living standards of children. The next section provides one piece in the puzzle by reviewing the existing structural arrangements in the EU countries in some detail and classifying system types, while abstracting from their size or the extent of the redistribution that they accomplish.

4. Review of Current Practice

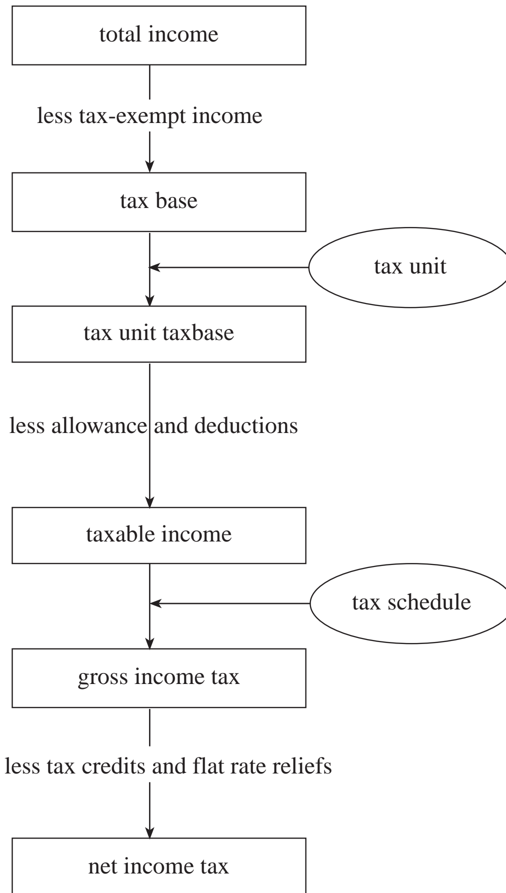
In this section we survey how family tax instruments are used in the countries of the European Union.[9] We focus on how the elements of national tax systems make allowance for children, marriage and the distribution of income within the family.[10] Figure 1 outlines the main elements of an income tax calculation. Incomes come from many different sources which may be taxed in different ways. For example, individuals receive earnings as employees or as self-employed and income from investments and property and from benefit and insurance plans. The *tax base* can relate to family structure by exempting family-related income (such as child benefits) or deducting expenditures on family-related consumption. The *tax unit* is the unit over which the tax base is aggregated. In principle, the unit can vary in definition for different types of income. In practice, the assessment unit is usually the individual, the couple, or the couple plus the dependent children. Personal *allowances*, which may relate to family size and composition, are subtracted from the unit's aggregate tax base to produce taxable income. Taxable income is applied to a *tax schedule* of tax rates and bands to produce *gross income tax*. Finally, *tax credits* and flat rate reliefs are subtracted to produce net *income tax*. These credits and reliefs may relate directly or indirectly to the composition and characteristics of the tax unit.[11] Further explanation of each of these terms can be found in Annexe 1.

[9] Information in this section is based primarily on responses to questionnaires on tax and benefit policies in each of the member states, collected as part of the Euromod Preparatory project. These are reported in full in Sutherland (1997b). Information is supplemented by other sources, including Jepsen et al. (1997) and OECD (1993).

[10] Except where otherwise specified, we treat all couples as though they were legally married and do not distinguish between married and cohabiting couples. Annexe 2 describes the actual treatment of cohabiting couples in each of the EU countries.

[11] The relationship is *direct* if, for example, child tax credits depend on the number of children. It would be *indirect* if, for example, a tax relief derives from home-purchase loans, which are more common among parents of dependent children than they are among younger or older groups.

Figure 1: *Calculating income tax*



■ 4.1 *Tax unit*

The general trend in EU countries over the last 20 years has been a move towards independent taxation and away from joint taxation. Three broad types of joint taxation – *aggregation, income splitting* and the *family quotient* – are defined in Annexe 1. Since the 1970s Austria, Belgium, Denmark, Finland, Italy, the Netherlands, Spain, Sweden and the UK have moved away from a primarily joint system of taxation of earned income (OECD 1993). In addition Greece has had an independent system for some time. The other countries still have joint assessment. However, a number of countries with independent

taxation as the main system operate parallel joint taxation systems for certain types of income such as income from capital or self-employment income. Others which have joint tax systems allow couples the option of using individual tax assessment in certain circumstances. Table 2 summarizes the current situation.

Table 2: *Types of joint taxation in EU countries*

	Joint tax assessment of couples	Children's income included?
Austria	None	No
Belgium	Property income taxed jointly, and family quotient used when one spouse has low income	Yes
Denmark	Capital income taxed jointly	No
Finland	None	No
France	Family quotient	Yes (depends on income level)
Germany	Optional income splitting	No
Greece	None	No
Ireland	Optional income splitting	No
Italy	None	No
Luxembourg	Aggregation	Yes
Netherlands	Property income is assessed with income of higher earner	Investment income only
Portugal	Income splitting	Yes (if less than minimum wage)
Spain	Optional aggregate taxation	Yes
Sweden	None (joint taxation of wealth only)	No
UK	None	No

Sources: Responses to Euromod Income Tax Questionnaire, Jepsen et al. (1997).

France, Portugal and Luxembourg are the only countries with mandatory joint taxation for couples for all incomes. In France, income is jointly taxed through a *family quotient* system. This divides the family's taxable income by a quotient which depends on family size. The resulting calculated tax is multiplied by the same quotient. Portugal uses a system of *income splitting* (with a quotient of 2, or 1.9 if one spouse has at least 95 percent of a couple's joint income). Luxembourg relies on the *aggregation* method of joint taxation. The

countries allowing couples the option of joint taxation include Germany, Ireland and Spain. Germany and Ireland use the income splitting system (a quotient of 2 for couples, 1 for single individuals). Spain relies on the aggregation method, but if a household opts for joint taxation, then, except at the bottom of the scale, the widths of the tax bands are less than double those for single people.

The countries having some elements of joint taxation, although employing largely individual tax systems, include Belgium, the Netherlands and Denmark. In Belgium and the Netherlands the property income of couples is assessed with the higher earned income. Also in Belgium, families with one earner or with a low-income second earner can use a family quotient, which means that 30 percent of income can be transferred to the lower income spouse, up to a ceiling. In Denmark capital income over a certain threshold is taxed as part of the higher earning spouse's income. The tax is then distributed in proportion to the capital income over a certain level. In Belgium and the Netherlands a proportion of self-employment income can be attributed to a "helping spouse" and then assessed separately.

As shown in Table 2, some countries also extend the tax unit to include children's incomes. In Belgium a child's income is taxed with the income of the higher earning parent. In the Netherlands the income from the capital (over a limit) of children under 18 is deducted from the allowance for the capital income of the higher earning parent. In France unmarried children with low incomes can opt to be included in the family quotient and have their incomes jointly assessed with their parents' incomes. Spain and Luxembourg both include children's incomes in the aggregation of the family tax base.

■ 4.2 *Tax base*

Most countries exempt certain family-related incomes from the tax base, as shown in Table 3. Child benefits in most countries are fully or partially exempt from income tax (based on the idea that they are substitutes for tax allowances or credits). Means-tested social assistance benefits, too, are mainly exempt. However, it must be noted that many of these transfer payments are targeted at people with low incomes and thus may escape the tax net anyway. Although no details are given here, in some countries maintenance payments from absent parents are exempt from income tax (and are paid out of post-tax income). In other cases, payments are tax deductible, and the receipts count as taxable income.

Table 3: *Family-related income which is exempt from income tax*

	Incomes exempt from income tax
Austria	SAB, CB and UB
Belgium	SAB and CB
Denmark	CB
Finland	SAB and CB
France	SAB and CB
Germany	SAB and CB
Greece	CB (90 percent deductible), SAB and sickness benefits
Ireland	CB and child elements of SAB and SIB
Italy	SAB
Luxembourg	SAB and CB
Netherlands	CB
Portugal	SAB, CB, UB and sickness benefits
Spain	None
Sweden	SAB, CB (not special CB for disabled) and accommodation allowance
UK	SAB and CB

Note: CB = child benefit, SAB = means-tested social assistance benefits, UB = unemployment benefits, SIB = social insurance benefits.
Source: Responses to Euromod Income Tax Questionnaire.

■ 4.3 *Tax allowances and tax credits*

The use of tax allowances and credits to account for family differences varies a great deal among countries, as shown in Table 4. Lone parents, families with children, married couples and one-earner couples are all family types which may attract family-related tax concessions.

Children themselves attract tax allowances in Germany and tax credits in Austria, Belgium, Greece, Italy and Spain. In some countries universal (or mildly income-related) child benefits act as refundable tax credits, although they are typically not administered through the tax system.

In Germany an extra child allowance is payable if the parents are owner-occupiers. In addition, if the child tax allowance is not all used, then up to 19 percent of the unused allowance can be paid as a cash transfer. Lone parents are entitled to extra allowances in Germany, Ireland, Luxembourg and the Netherlands. Tax credits for lone parents are available in Austria, Belgium and the UK. In the Netherlands, single parents with employment income and at least one child under 27 get an allowance which is proportional to income and subject to limits.

Table 4: *Family-related tax allowances and tax credits in EU countries*

	Family tax allowances	Family tax credits	Universal child benefits[a]
Austria	None	Children, lone parents, one-earner couples	Yes
Belgium	None	Children, lone parents, one-earner couples, widows, other dependants, disabled children	Yes
Denmark	None	Transferable tax credits	Yes + lone-parent supplement
Finland	None	None	Yes + lone-parent supplement
France	None	None	
Germany	Allowances for old age, lone parenthood, children, owner-occupiers with children	None	Yes (maximum is income related)
Greece	Handicapped persons	Children, one-earner couples	Yes (maximum is income related) + lone-parent supplement
Ireland	Allowances for widow(er)hood, caring, disabled children, lone parenthood		Yes
Italy	None	Children, other dependants, spouse (all income dependent[b])	No
Luxembourg	Lone parent allowance	None	Yes
Netherlands	Lone parent allowance (varies by age of child); single allowances are transferable between spouses	Lone parents	Yes
Portugal	None	One-earner couples	Yes
Spain	None	Children, other dependants	No
Sweden	None	None	Yes
UK	None	Married couples, lone parents	Yes + lone-parent supplement

Notes: a. Broadly equivalent to refundable child tax credits. b. If one spouse has income less than a set limit, then the other spouse receives a credit. The value of this credit also depends on the recipient's income.
Sources: Responses to the Euromod Income Tax Questionnaire, Jepsen et al. (1997).

Austria, Belgium, Italy, Greece and Portugal have allowances for couples with only one earner. In Greece this allowance is only available if there are *no* dependent children. Both Italy and the UK have tax credits for married couples that are paid even if there are two earners. In Italy, there is an additional tax credit for one-earner couples, including couples where one spouse earns a small amount. It is partially income dependent in the sense that its value falls as income rises up to a limit and is then allowed at a flat rate. The tax credit in the UK is greater for pensioners and can all be claimed by one spouse or split between them. In Denmark credits may be transferred between spouses, and in the Netherlands if one spouse has income which is less than the personal allowance, the allowance may be transferred to a higher earning spouse.

Special allowances and credits may be available for older people, widow(er)s, carers, disabled people and the parents of disabled children. Allowances for the elderly may be transferred in Ireland.

■ 4.4 *Deductions and reliefs*

Table 5 summarizes the deductions which can be made from the tax base for family-related expenditures and also the reliefs on expenditure that take the form of deductions from tax (as tax credits). In some cases, where the deduction is automatic and calculated according to a formula rather than actual expenditure, there is little to distinguish deductions and reliefs from allowances and credits. For example, some countries give allowances or credits if children are in education. In France tax credits are available for children who attend secondary or tertiary education. Germany gives higher child allowances if a child is in education. Austria allows families an automatic special deduction for expences up to a limit which varies with family composition and by the number of earners in the family. In Greece life assurance expences up to a proportion of total family income can be deducted, and deductions are shared between spouses according to income. Other family expence deductions, based on officially recognized receipts, are used by the husband and are only transferable if he does not use them all. Portugal allows a number of deductions which vary according to marital status and include insurance payments and the cost of long-term care for elderly parents.

A number of countries allow some expenditures related to children's education to be tax deductible. These expenditures include, in Greece, rent paid by children who are in education away from home, in Italy, a proportion of tuition costs for children in state schools and universities, and, in Portugal, tuition costs.

The costs of childcare are another important deduction related to family status. Belgium permits 80 percent of childcare costs to be deductible. In France there is a childcare allowance for children under 4 up to a daily limit, and for children under 7 up to 25 percent of childcare expences are deductible. In Germany lone parents can claim a lump-sum deduction to cover childcare costs. Up to 40 percent of childcare expences can be deducted in Greece. In the Netherlands childcare can be deducted for single parents, but only for expences *over* a limit for married couples. Spain treats tax relief for childcare costs as a tax credit: 15 percent of childcare expences are deductible from taxes up to a ceiling.

Table 5: *Family-related tax deductions and reliefs in EU countries*

	Tax deductions for family-related expences	Children's education	Childcare
Austria	Automatic expence deduction varies with family composition	No	No
Belgium		No	Yes, 80 percent
Denmark	None	No	No
Finland	None	No	No
France	None	Yes (credit)	Yes
Germany	None	Yes (allowance)	Yes, for lone parents
Greece	Family-related expences with official receipts; life assurance expences	Rent when in education deductible	Yes
Ireland	None	No	No
Italy	Life assurance expences	Tuition costs deductible	No
Luxembourg	None	No	
Netherlands	None	No	Partially, depends on income
Portugal	None	Tuition costs deductible	
Spain	None	No	Yes, 15 percent of expences up to a maximum
Sweden	None	No	No
UK	None	No	No

Sources: Responses to the Euromod Income Tax Questionnaire, Jepsen et al. (1997).

■ 4.5 *Tax schedule*

The progressivity of the tax schedule influences the way the value of family tax concessions increases with income. In addition, the location of families of different types on the schedule affects the extent to which the tax system can be used to target measures on people with low incomes. Table 6 shows that there is wide variation in tax schedules among countries. The range between top and bottom tax rates varies from 54 percentage points to 20, and the lowest rate varies from 2.5 to 39 percent. The table shows average tax rates for single peo-

Table 6: *Income tax schedules in the EU, April 1996*

	Number of bands	Minimum rate	Maximum rate	Marginal tax rate on average wage[a]	Average tax rate on average wage[a]
Austria	5	10	50	32	9.2
Belgium[b]	7	28	58	45	28.2
Denmark[c]	4	39	67.5	48.1	35.8
Finland[c]	6	24.53	58.75	44.53	26.3
France	6	12	56.8	25	8.8
Germany[d]	—	19	53	34	21.6
Greece[e]	5	5	45	15	2.0
Ireland	2	27	48	48	25.6
Italy	7	10	51	34	17.8
Luxembourg	17	2.5	52.5	30	12.7
Netherlands	3	6.35	60	6.35	5.5
Portugal	4	15	40	25	8.75
Spain	17	20	56	27	17.1
Sweden[c]	1	27.5	58.8	38.0	33.7
UK	3	20	40	24	16.9

Notes: a. These calculations refer to single people aged 30 with approximately median earnings and no other income. Marginal tax rates are deduced by the authors on the basis of the average tax rate calculations contained in responses to the Euromod questionnaires. b. Includes 3 percent austerity surcharge. c. All tax rates include local income taxes in the Nordic countries, where these form a very significant portion of total income taxes. Each country applies a proportional tax which varies by locality. In Denmark and Finland the minimum tax rate column includes the lowest local tax, and the maximum includes the highest local tax. In Sweden, however, the average local rate is included in both. d. The tax schedule is not based on tax bands, but on a polynomial. e. This does not refer to withheld income tax which has ten bands, with a minimum rate of 2 percent and a maximum rate of 30 percent. The Greek calculations assume typical levels of rent and household expences, which are deductible.
Source: Responses to the Euromod Income Tax Questionnaire. In some cases the information refers to income earned in 1995, in others, to income earned in 1996.

ple (age 30) on median earnings and thus indicates how the importance of income tax can vary among countries. The variation in marginal rates faced by a person on average earnings partly confirms this, but also demonstrates how the person on average earnings is positioned in terms of the national tax schedule. For example, such a person faces the top rate of tax in Ireland, but the bottom rate in the Netherlands.

There are a number of cases in which the tax schedule varies according to family type. In Ireland the tax schedule can vary at the bottom of the income distribution through the use of exemption limits and marginal relief (see Annexe 1). In Portugal liability for income tax is subject to a constraint that income cannot be taxed if it is less than the minimum wage. In Spain the tax schedule for joint taxation is different from that for separate taxation.

■ 4.6 *Summary*

To conclude this section, we draw out some general similarities and differences among the family tax arrangements across EU countries. Table 7 summarizes, under five headings, the main types of income tax instruments described above. We categorize countries into four groups, divided between those with joint tax systems and those with individual tax systems.[12] Our categorizations are based on the existence of particular instruments in national income tax systems and not on the extent of redistribution within the systems. Within groups, we order countries alphabetically; no distinction is drawn among countries within the group. For example, Sweden is more purely a Group-A country with no family tax instruments than is Denmark, which has transferable tax credits.

The first group we consider (Group A) includes the countries with fewest family tax instruments within the income tax system. These countries have independent taxation of couples, do not have any major tax-based redistributive mechanisms for families with children and correspond to the Scandinavian-Anglo group of Millar and Warman (1996). The remaining groups, however, do not fit so neatly into the taxonomy of Millar and Warman, with each group containing both "Central" and "Mediterranean" countries. Group B consists of those countries using independent taxation, but having instruments which account for both couples and children; it contains Austria, Greece, Italy and the Netherlands.[13] We also consider two groups of countries which employ joint taxation: Group C, which has optional joint taxation and consists of Belgium, Germany, Ireland and Spain, and Group D, which has

[12] For this generalization, we consider a system to be joint if employee income can be taxed jointly.

[13] Note that the existence of more horizontal redistributive instruments does not mean that there is more horizontal redistribution.

mandatory joint taxation and includes France, Luxembourg and Portugal.

We might expect countries with greater proportions of dependants to have more concern for horizontal redistribution. Table 7 also provides indicators of the extent of dependency. It shows that countries with low married female

Table 7: *Types of family taxation in EU countries*

	Joint taxation[a]	Allowances and credits		Expenditure deductions		Employment rate of married women	Fertility rate
	1	2 Child	3 Couple	4 Lone parent	5	6	7
	Group A: Independent tax, few family tax instruments						
Denmark	N	N	N	N	Y	57.9	1.76
Finland	N	N	N	N	N	58.2	1.85
Sweden	N	N	N	N	N	High[b]	2.09
UK	N	N	N	Y	Y	54.6	1.79
	Group B: Independent tax, many family tax instruments						
Austria	N	Y	N	Y	Y	50.2	1.51
Greece	N	Y	Y	N	Y	35.0	1.39
Italy	N	Y	Y	N	Y	31.7	1.25
Netherlands	N	N	Y	Y	Y	42.6	1.59
	Group C: Optional joint taxation						
Belgium	Y	Y	Y	Y	Y	41.9	1.58
Ireland	Y	N	N	Y	N	46.3	1.40
Germany	Y	Y	Y	Y	N	34.9	2.02
Spain	Y	Y	Y	N	N	25.3	1.23
	Group D: Mandatory joint taxation						
France	Y	N[c]	Y	N	N	47.1	1.73
Luxembourg	Y	N	N	Y	N	33.6	2.12
Portugal	Y	N	Y	N	Y	52.8	1.55

Notes: a. If joint taxation includes only capital income or self-employment income, then we do not categorize this country as having a joint system. Our rationale is that this form of taxation is designed to prevent evasion and not to act as a redistributive mechanism. b. The Eurostat labour force survey does not include married women employment rates for 1995 in Sweden. However, from other data sources, we find that employment rates are similar to those in other Scandinavian countries and thus can be considered high. c. Although France does not explicitly have child tax allowances, the family quotient system of taxation means that the tax system is highly distributive towards families with children.

Sources: Columns 1-5: Tables 2-5, Column 6: Eurostat (1997), Column 7: Millar and Warman (1996).

employment rates are more likely to have couple-related tax instruments. The opposite, however, is the case for child-related instruments. Thus, with the exception of France, the seven countries with child-related tax instruments have the seven lowest fertility rates. This is a reflection of our focus on just one part of the tax-benefit system. As Table 4 shows, all EU countries include some child-related concession in their systems. Many countries use the benefit system as the main vehicle. The Mediterranean countries, however, with very limited child benefits and social assistance benefits, are more likely to channel this redistribution through the tax system. Although Austria, France and Germany all have generous child benefits, *additional* redistribution is achieved through the tax system for a variety of historical and legal reasons. For example, Germany has child tax allowances because of a constitutional provision which ensures that a minimum subsistence-related amount is exempt from taxation.

Finally, tax instruments which favour lone parents are generally available in the EU, except in Mediterranean countries, where lone-parent rates tend to be low, and in Scandinavian countries, where typically there is generous provision in the benefits system and through state-funded childcare services.

Two of the Group D countries, France and Portugal, have above average employment rates for married women. One might therefore expect more demand by married women for independence over their tax affairs. However, tax rates as described in Table 1 are quite low in these countries, and tax instruments such as joint taxation are thus likely to have less of an impact on family incomes than they do in other countries with more important income tax systems.

Our classification of family tax arrangements into four groups is made on the basis of the *existence* of different provisions within the tax systems and is a means for drawing out some general comparative points. This comparison does not make any assessment of the *extent* of the horizontal redistribution which takes place within the systems. It may in fact be the case that a country with few family instruments accomplishes more redistribution than does a country with many such instruments. Three additional factors need to be taken into account for a full comparison of the redistributive properties of the national systems: (i) the size of the income tax system, (ii) the size of the instruments in question and (iii) the nature of the underlying population and the pre-tax income distribution. The following two sections focus on the second of these, holding variations in the first and third constant.

5. Comparing Family Tax Instruments: A Microsimulation Exercise

Most cross-country comparisons of the tax treatment of families have focused solely on the treatment of hypothetical or "model" families. For example, Pechman and Engelhardt (1990) have compared the family tax provisions and the tax liabilities for different stylized family types in 11 industrialized nations. More recently Jepsen et al. (1997) have examined average and marginal tax liabilities for different family types in each EU country. *The OECD Jobs Study* (OECD 1995) has also relied on this method to examine work incentives for different family types. Although these exercises are useful for highlighting points about the tax system for particular family types, they do not take into consideration the wide variation in family circumstances, nor the differences in detail (such as the source of income or the existence of tax reliefs on expenditure) that may have a significant effect in some situations.

Of pertinence to the current study are the relative sizes of the incomes of husbands and wives and the relative sizes of the incomes of families with children and of those without children. Typically, model family analysis explores just a few variants, but these may not be the most "typical", and they may fail to cover important sets of circumstances.[14] The method of comparison we employ makes use of a microdataset of real households taken from a sample survey. Not only are all the most relevant family types present, but the dataset as a whole can be taken as representative of the population, and the relative importance of each type of circumstance can be assessed.

We use a microsimulation method to simulate the effects of different tax treatments of the family. The dataset we use comes from just one country, the UK, so our analysis abstracts from national differences in income distribution, participation in employment, marriage rates, fertility and so on. The use of a constant population allows us to focus on the tax instruments themselves, drawing out their impact on the relative tax burdens of families with children compared to families without children, on the income distribution and on the incentives of husbands and wives to earn income.

Our starting point is an independent tax system, with no tax concessions targeted directly on marriage, parenthood or children. It is based on the 1997/98 UK tax system, with the existing tax credits for married couples and lone parents removed.[15] Thus, the neutral position against which we compare other systems is that of equal treatment of individuals rather than equal treatment of family units.

[14] See Atkinson and Sutherland (1983).
[15] See Table 4. No adjustments are made to compensate for the loss of the tax credits.

The rest of the UK tax system provides the context for our simulations of family taxation. We assume the 1997/98 tax schedule, definition of the tax base and tax expenditures, and level of personal allowance.[16] For more details, see Annexe 3.

The instruments we consider are "borrowed" from other European countries, and for convenience we refer to them below by the name of the country. However, it should be clear that, following the methodology used by Atkinson, Bourguignon and Chiappori (1988), who explored the effect of the UK system on the French population, we only model a simplified version of limited parts of these national tax systems, and the underlying data describe the population of the UK, not that of the country concerned.

■ 5.1 *The taxation of couples*

First, we consider five types of concession to couples. Two are based on independent tax systems (individual assessment).

- An additional allowance granted to married couples and lone parents. In the case of couples, it is assumed to be allocated to the husband in the first instance, and any part that is unused is transferred to the wife. This is the UK system.
- Personal allowances are transferable between husband and wife on an all-or-nothing basis. (If one spouse has an income less then the allowance, it is transferred to the partner.) This is the system as it operates in the Netherlands.

We consider three types of joint taxation, following the discussion in Section 4.

- Joint taxation (aggregate) as in Spain, where the incomes of spouses are aggregated, and the tax threshold and width of bands are increased.
- Joint taxation (income splitting) as in Germany, where aggregated incomes are divided in two and applied to the same tax schedule as for a single person. The resulting tax is then multiplied by two.
- Joint taxation (family quotient) as in France, where aggregated incomes are divided by a quotient depending on marital status and number of children. The tax is calculated on this amount, and the resulting figure is multiplied by the quotient. There is a maximum reduction in the tax which can derive from the child part of the quotient.

[16] In the UK in 1997/98 any income from capital that fell in the standard rate band was taxed at a rate 3 percentage points lower than the rate on earned income in that band. To simplify matters here, we assume a uniform rate throughout, regardless of source.

We compare different policies using the microsimulation model for the UK, Polimod, which is based on data from the Family Expenditure Survey and is described in Redmond, Sutherland and Wilson (1998). The translation of the structure of family taxation from one tax system into another tax system, which may operate on a very different scale, is not always obvious. The borrowed structures are transplanted into the UK system in the following way.

For the different treatments of couples, we assume that the alternative structure retains the same proportional relation to the treatment of single people in the country concerned, but scaled to the size of allowances and width of bands in the UK and using the UK tax base. This means that the alternatives all have different revenue implications. This is partly a product of differences in relative generosity to couples as a whole within the actual national tax systems and partly a result of reliance on the UK tax schedule and tax base as the context for the simulation. The combination of a relatively comprehensive tax base with relatively low marginal rates in the UK has an effect on the impact of the alternative treatment of couples that is different from the various national tax schedules (which may be more progressive or involve generally higher marginal rates) and tax bases (which may be narrower or include different types of income or relieve different types of expenditure). To explore the effect of different tax schedules, we use two schedules. The first is the actual 1997/98 UK schedule, and the second is a more progressive schedule which raises the same revenue under full independent taxation. More information is provided in Annexe 3.

In detailed terms, the alternative schemes are translated for the UK system as follows.

- UK: The existing tax credits for married couples and lone parents are restored to their 1997/98 monetary values. As in that year, they are allowed at a fixed rate of only 15 percent, meaning that they are worth just 30 percent as much as the single personal allowance to a standard rate (23 percent) taxpayer.
- Netherlands: The UK single personal allowance is deemed to be transferable between spouses.
- Spain: The income of both spouses is added to form the joint tax base. We ignore children's income, which continues to be taxed separately.[17] In Spain, under separate taxation, there are 17 bands, for which the marginal rate of tax varies from 20 to 56 percent. Under (optional) joint taxation, this becomes 16 bands. In addition, the personal allowance and the width of the first tax band are approximately doubled. The width of all the other bands is increased by about 10 percent.[18] In order to approximate the Spanish form of joint taxation

[17] The definition of "children" in the UK for tax purposes is much more restrictive than that in Spain. In the UK few children have income above the tax threshold.

[18] The 16th band increases by 54 percent.

in the UK context, which has only three tax bands, for couples we double the UK personal allowance and the width of the lowest rate band (20 percent) and increase the width of the standard rate band (23 percent) by 10 percent. Under the alternative progressive tax schedule, which has more bands and a larger allowance, the allowance and the width of the first band are doubled, and the widths of the remaining bands are increased by 10 percent.

● Germany: For married couples, the incomes of spouses are aggregated and halved, and this tax base is applied to the individual tax schedule to arrive at half the couple's tax liability. UK tax reliefs are deducted as credits. Here, they are deducted before the final stage of doubling the tax, making them more generous in some circumstances than they are under the independent tax system.

● France: Table 8 outlines the way the French family quotient is calculated. Additional children increase the quotient by 1. For married couples, the incomes of spouses are aggregated, and, for both married couples and lone parents, this tax base is divided by the quotient and then applied to the individual tax schedule. The resulting tax is multiplied by the quotient to arrive at the family's tax liability. There is a limit to the extent to which the tax can be reduced as a result of the child portion of the quotient. This limit was 31,240FF per annum per child quotient weight in France in 1995. Because the French and UK tax schedules are very different, we translate the value of this limit by relating it to the size of the personal tax allowance. The ratio of the reduction limit to the individual tax allowance in France in 1995 was 1.406. This ratio is applied to the UK personal allowance to derive the maximum annual tax reduction when the "French" family quotient is introduced into the 1997/98 UK tax system. UK tax reliefs are deducted as credits. Here, they are deducted before the final stage of the application of the quotient, making them more generous in some circumstances than they are under the independent tax system. We ignore children's income, and assume that it continues to be taxed separately.

Table 8: *Definition of the family quotient*

Number of children	Single	Married
0	1.0	2.0
1	2.0	2.5
2	2.5	3.0
3	3.5	4.0
4	4.5	5.0

Source: See Bourguignon et al. (1997).

■ 5.2 *The tax treatment of children*

The five alternative tax arrangements for couples that are outlined above mainly concern the treatment of marriage and the incomes of husbands and wives. We can contrast the indirect effects of these arrangements on families with children with tax concessions which are directly targeted on children. These may take the form of allowances or credits which may vary in size according to the age and parity of the child. In order to illustrate the distributional effects of different treatments of children, we simulate the following alternatives.

- Child tax allowances to be set against the taxable income of the higher income parent.
- An increase in the child benefit.

In both cases, for simplicity, we examine the effects of a concession which does not vary with the age or parity of the child. In general, the horizontal and vertical effects of child concessions also depend on whether they are integrated into an independent or a joint taxation system, and in the former case they further depend on whether the mother or father receives the benefit of the concession or whether it is transferable between parents. The UK system, which we use as a starting point, already has a universal child benefit which is payable in the first instance to the child's mother. We assume that the increase in the benefit is also paid in this way. To introduce a child tax allowance under independent taxation, we must choose which parent should receive the allowance to set against taxable income. In this exercise we assume that the child tax allowance is set against the income of the parent with the higher income (usually the father). This has the effect of maximizing the benefit to the *family*. Since only a minority of mothers in the UK have sufficient taxable income to be able to benefit in full from child tax allowances, allocating them to the mother would prevent many families from benefiting.[19] Our modelling focuses on family incomes and does not distinguish among the effects of tax measures on individual incomes within the family. However, as discussed in Section 2, child welfare may be best served by maximizing the independent incomes of mothers, and the importance of this aspect – and the difference between the two policy alternatives in this respect – should not be forgotten.

In each case we scale the size of the tax allowance or benefit increase so that its introduction into the UK system costs the same as would one of the

[19] Another option, not taken here, is to make the allowance transferable to the father if the mother cannot use it. The advantages and disadvantages of such transfers are similar to those of the transferability of adult personal allowances between spouses. These are discussed in Section 2 and illustrated in Section 6.

arrangements for couples considered above. This allows us to compare "family" instruments to those that are targeted directly at children. We scale the size of the changes so that they cost the same as the introduction into the UK of (a) the married couple and lone-parent tax credits of the UK and (b) the family quotient of France.

6. Comparing Family Tax Instruments: Simulation Results

6.1 *Distribution*

Table 9 shows how the alternative tax treatments of couples have very different revenue implications. The revenue effect itself is an indicator of the relative generosity to couples of the alternative schemes. Using the UK tax schedule, the UK system costs £3.5 billion per year – about 5 percent of total income tax revenue – and benefits all taxpayer couples and lone parents. (Some 25 percent of couples and the majority of lone parents have incomes below the tax threshold before the introduction of any of the alternative schemes.) The system in the Netherlands costs £5.2 billion and only benefits couples in which one spouse does not use his or her personal allowance and the other spouse does. However, the size of the gain for these people is much larger. (The single allowance which is transferred is worth about three times as much at the lowest marginal rate as the married couple's tax credit.) The German system costs substantially more (£8.6 billion) because high-income couples benefit particularly from joint taxation. However, the Spanish system costs less (£3.3 billion) because the higher bands are widened by less than 100 percent; higher income couples actually lose from this form of joint taxation, and the net cost is similar to the much less vertically redistributive UK system. Finally, the French system costs 70 percent more (£14.4 billion) than does the German system because it includes a generous allowance for children in the quotient calculation.

For the French system and to a small extent for the UK system (via the lone-parent tax credit), there are direct effects on families with children. However, also of interest are the indirect effects: the proportion of the tax reduction that is targeted on families with children by virtue of the tax concessions to couples. While families with children themselves make up 24 percent of all families and 49 percent of all couples and lone-parent families in the UK population, the proportion of the tax reduction falling on families with children varies from 40 percent for the Dutch system to 73 percent for the French system. In each of the three joint taxation cases, families with children gain more in proportion to their numbers than do childless couples. Thus, joint taxation appears especially to benefit children. In both of the independent-tax-

ation-based systems, families with children gain less than do couples without children. This is particularly interesting in the case of the system in the Netherlands. One might expect one-earner couple families – the main beneficiaries – to include a disproportionate number of children. This is not the case in the UK population, in which 24 percent of one-earner couples have children, contrasted with 46 percent of two-earner couples. For those couples with children, the average number for one-earner couples is 1.8, while for two-earner couples it is 1.7.[20]

Table 9 also shows the effect of three of the schemes on the alternative assumption that a more progressive tax schedule is in place. Not only is the revenue cost of tax reductions for couples greater under a progressive schedule in all cases, but the targeting of the reduction on higher income couples is also sharpened. This illustrates the fact that the more progressive the tax schedule, the greater the impact of joint taxation.

Table 9: *The costs and benefits of alternative tax treatments of couples*

	With UK tax schedule					With progressive schedule	
	Revenue cost (£ billion/ year)	% total gain to families with children	% couples gaining	% couples losing	% total gain to 50% of couples with highest income	Revenue cost (£ billion/ year)	% total gain to 50% of couples with highest incomes
UK	3.45	43	75	0	54	—	—
Netherlands	5.23	40	37	0	45	—	—
Spain	3.32	64	50	6	31	4.70	37
Germany	8.55	55	70	0	65	11.46	68
France	14.41	73	76	0	61	18.52	64

Source: Polimod; see Redmond, Sutherland and Wilson (1998).

We examine the vertical effect of the five alternative schemes by considering the average reduction in tax for couples at various points in the (all-family) income distribution. Net family incomes for the population have been equivalized using the OECD scale and ranked by dividing the distribution into ten equal-sized groups (deciles).[21] Figure 2 and Table 10 show the distribution of annual tax reductions for couples in each decile of family income and for each alternative scheme. The scale of redistribution is different in each case, so the points to draw

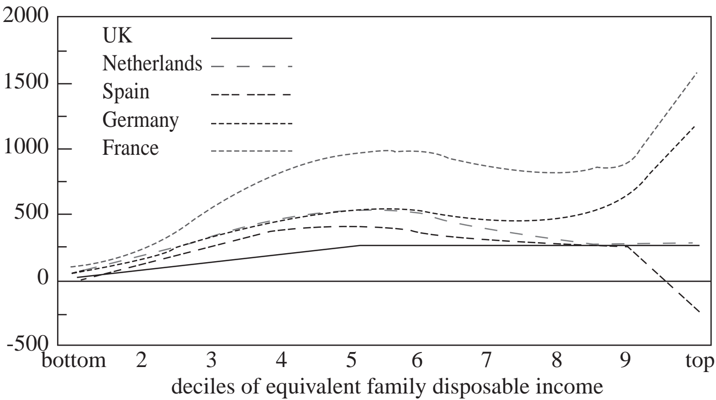
[20] The self-employed are not counted as earners in these calculations. Here and throughout this section, “children” are all people under 16 or under-19-year-olds who are in full-time secondary education. Clearly, many of the older “couples without children” are parents; their children have simply ceased to be defined as dependent.

[21] The OECD scale counts family members in a ratio of 1 : 0.7 : 0.5 (first adult : other adults : children under 14).

out here relate to the shape of the curves, not their position relative to each other. The distribution using the UK system rises slowly to a maximum level at high incomes. This is entirely due to the position of couples in the all-family distribution, since the value of the tax credit is fixed (for couples who have income above the tax threshold). Table 10 also shows that, even after the application of the equivalence scale, couples are concentrated at the top of the income distribution.

Figure 2: *Average gain per couple, UK tax schedule*

£ per year



Source: Polimod; see Redmond, Sutherland and Wilson (1998).

With the scheme in the Netherlands, the gain is greatest in the middle of the income distribution, the position where most one-earner couples are located, and falls again at higher incomes, where a higher proportion of couples are using both their allowances and stand to gain nothing from a transfer. With the German and French systems, gains increase with income over the whole range. Couples gaining are located towards the middle of the distribution, where there is a concentration of couples with particularly unequal earnings (including one-earner couples), and right at the top, where higher rate taxpayers are positioned in the UK tax schedule. The effect is especially marked for the French system due to its impact on families with children and the concentration of children in the middle of the family income distribution. The distribution for the Spanish system has a similar shape to that for the German system in the bottom part of the income distribution, but losses replace gains at the top of the distribution, where the narrowing of the higher tax bands claws back tax from more well off couples.[22]

[22] It should be noted that, as explained in Section 4, the actual Spanish tax system allows couples to opt for independent taxation, meaning that this clawback typically does not occur in practice.

Table 10: *The distributional effects of alternative tax treatments of couples, UK tax schedule*

Decile of equivalized disposable family income (all families)	% couples	% families with children	UK		Netherlands		Spain		Germany		France	
			Average gain per couple	% total gain	Average gain per couple	% total gain	Average gain per couple	% total gain	Average gain per couple	% total gain	Average gain per couple	% total gain
Bottom	3.6	7.6	17	0.4	25	0.2	17	0.4	73	0.5	115	0.6
2nd	8.0	11.5	57	2.1	135	3.2	130	5.0	165	2.4	259	2.4
3rd	8.8	10.8	128	5.4	304	8.1	265	10.9	318	5.1	547	5.5
4th	8.0	10.1	203	7.9	454	11.0	374	14.3	465	6.9	840	7.7
5th	9.8	11.8	254	11.8	541	15.8	418	19.2	534	9.6	971	11.0
6th	11.3	13.0	260	13.8	502	17.1	368	19.6	508	10.6	998	12.9
7th	11.9	11.7	259	14.7	387	13.9	305	17.3	449	9.9	861	11.9
8th	12.1	9.9	251	14.3	292	10.6	273	15.6	476	10.6	828	11.4
9th	12.6	7.7	243	14.1	252	9.6	242	14.2	610	14.1	881	12.4
Top	13.9	5.9	243	15.5	253	10.5	-255	-16.7	1190	30.4	1598	24.3
All	100	100	212	100	332	100	211	100	543	100	882	100

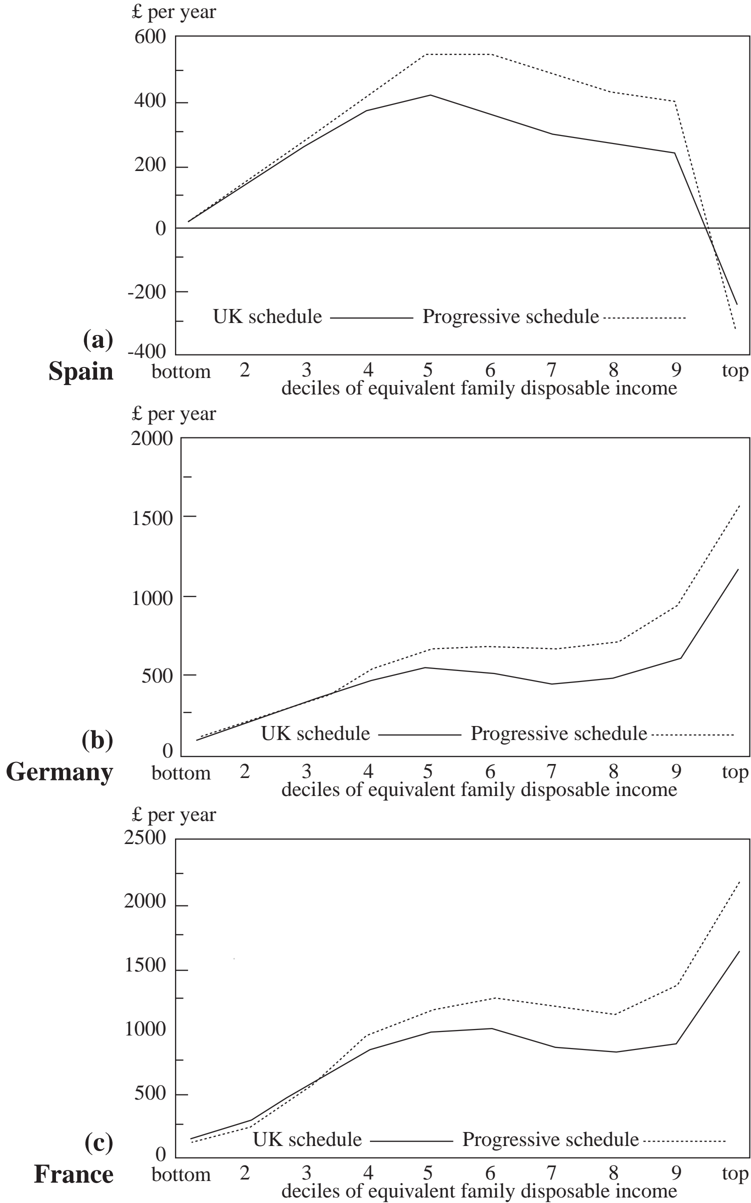
Source: Polimod; see Redmond, Sutherland and Wilson (1998).

Figure 3 shows the effect of three of the schemes within the progressive tax schedule. In each case, the effect is similar to that under the less progressive schedule, but more exaggerated. As higher marginal rates are encountered in the middle rather than at the top of the income range and as the number of bands increases, the advantage of joint taxation for many couples becomes greater. The main exception is high-income couples in the Spanish system, who face higher tax rates lower down in the family income distribution.

Table 10 also compares the effect of the schemes on the all-family distribution. We consider the percentage of the total gain that is received by families in each decile. This provides a picture of the vertical effect of the alternative "horizontal" measures.

Comparing these standardized distributions, we can see that the Spanish system is the most redistributive, since the losses by the high-income couples allow a greater proportion of the tax reduction to fall on middle-income families. Of the total net gain, 97 percent is received by the middle 60 percent of the family income distribution, compared with between 53 and 77 percent for the other systems. The French and German systems have effects which are similar to each other; the greatest part of the tax reduction is targeted at the

Figure 3: *Joint taxation with alternative tax schedules: the average gain per couple*



Source: Polimod; see Redmond, Sutherland and Wilson (1998)

highest income families (37 and 45 percent, respectively, being received by the top 20 percent of the distribution). Middle-income families (with children) benefit slightly more under the French system. Using the system in the Netherlands, the greatest proportion of the tax reduction falls on the middle of the distribution (on one-earner couples); 77 percent of the benefit is received by the middle 60 percent. Meanwhile, in the UK system, whereas all taxpayer couples and lone parents receive the tax credit, more of the benefit is targeted at those people with the highest incomes (30 percent being received by the top 20 percent, compared with just 20 percent for the system in the Netherlands).

The system which performs the best on the grounds of redistribution towards families with children is the French one. However, much of the benefit is targeted at the highest income families. The Spanish system avoids this effect, while still disproportionately benefiting children. However, this is largely a product of the clawing back of tax at higher incomes as the tax bands narrow. Without this feature, the Spanish system is equivalent to the German system, which performs less well on either ground.

■ 6.2 *Incentives*

One of the main arguments against both joint taxation and transferable personal allowances is the effect they have on the incentives of the spouse of the main earner to earn his or her own income. The first tranche of the second earner's income is taxed at a higher marginal rate than is the first tranche of the first earner's income. The earnings of one spouse may be taxed at a higher marginal rate than would be the case if this spouse were single or were the main earner. The earnings of the main earner may be taxed at a lower marginal rate than would be the case if this spouse were single or were the second earner.

Of most concern are schemes which offer particular disincentives for second earners to enter the labour force. These are usually intended to benefit one-earner couples. The transferability of allowances (as in the Netherlands) or specific allowances for couples with one earner (such as in Austria, Belgium, Greece and Portugal) are examples. Entry into the workforce by the second earner under these systems means either that all the earnings of this person are taxed with no allowance or credit to set against the taxes, or that the main earner's taxes rise.

However, joint taxation itself has an impact on the incentives to work of both spouses. We explore the asymmetries resulting from the various joint schemes by examining the effect of the schemes on the calculated marginal income tax rates (MITRs) of all individuals in the UK sample who are already employed. The extra tax paid by the family following a unit increase in earnings (£1 per

week) is calculated for each employee in the family. The calculations include people with very small earnings and are carried out independently and separately for the spouses in couples in which each member has earnings.[23]

Using the current UK tax schedule, Table 11 shows the change in the mean MITR for all employees (including single people) and for those who are husbands and wives.[24] The number affected by changes in the MITR is much smaller for the two schemes based on individual assessment (the UK and the Netherlands) than it is for the joint schemes (Spain, Germany and France). In the case of the UK, this is because the action of the extra tax credits for couples and single parents only lowers the marginal rate for those who are brought below the tax threshold by the new credit. It has no effect on the marginal tax

Table 11: *The effect on MITRs of alternative tax treatments of couples, UK tax schedule*

	UK	Netherlands	Spain	Germany	France
		Change in MITR (percentage points)			
All	-0.11	0.70	2.22	0.70	-0.07
Couples: husbands	-0.04	-0.70	-0.18	-2.46	-3.45
Couples: wives	-0.20	2.81	6.77	4.61	3.92
		% with increases			
All	0.1	0.8	24.0	19.5	17.6
Couples: husbands	0.2	2.1	16.2	10.1	8.7
Couples: wives	0.0	0.2	53.2	46.8	42.4
		% with decreases			
All	0.7	4.9	12.0	14.2	21.3
Couples: husbands	0.4	9.9	26.1	30.6	44.6
Couples: wives	1.0	3.8	7.0	8.7	10.7

Note: "All" includes single people. Mean pre-reform MITRs are 21.55 percent (all), 25.56 percent (husbands) and 17.60 percent (wives). The number of couples (in thousands): two-earner couples, 5,435; one-earner couples (husband), 2,340 and (wife), 1,612.
Source: Polimod; see Redmond, Sutherland and Wilson (1998).

[23] A full picture of calculated work incentives would also account for other deductions from income (such as social contributions) and the withdrawal of income-tested benefits. The costs of working – especially the costs of additional childcare – could also be included in the calculation. The calculations presented here are intended to isolate the effect of income tax rates.

[24] Here, we distinguish partners in a couple by their gender rather than by the relative size of their earnings. Some wives in the sample have higher earnings than do their husbands, and some are sole earners. Thus, our use of data describing actual couples reflects the UK distribution of earnings within couples and by gender, rather than stylized assumptions about relative earnings.

rate of other people. In the case of the system in the Netherlands, marginal rates are lowered for one-earner couples who benefit from being able to use the allowance of the non-earning spouse. However, the marginal rate of low-income second earners rises since the allowance of these people is all allocated to their partners.

All three of the joint schemes are characterized by falls in MITRs for husbands and rises in MITRs for wives. The system which is least advantageous in terms of increasing MITRs is that of Spain, where 53 percent of wives and 16 percent of husbands find that their marginal rates increase, whereas 7 percent of wives and 26 percent of husbands find that they fall. This is largely explained by the narrowing of the upper tax bands, pushing large numbers of two-earner couples into the highest tax bracket. However, the effect is nearly as large under the German and French systems, with, if anything, a greater disparity between husbands and wives. It is worth noting that, whereas the mean changes in MITRs are relatively small, this masks the fact that, for individuals whose rates do change, the differences among marginal rates (0, 20, 23 and 40) can be quite large. Clearly, both the size of the jumps between rates and the chance of crossing to a new rate depend on the particular tax schedule in place.

Table 12 shows the effect on MITRs if the underlying rate schedule is more progressive (with rates of 0, 20, 23, 30, 40, 50; see Annexe 3) for the three joint systems. The main difference in impact on incentives between the two

Table 12: *The effect on MITRs of alternative tax treatments of couples, progressive tax schedule*

	Spain	Germany	France
	Change in MITR (percentage points)		
All	2.69	0.41	-1.03
Couples: husbands	-1.25	-4.53	-6.55
Couples: wives	9.31	6.12	4.68
	% with increases		
All	28.8	19.2	16.9
Couples: husbands	18.5	5.3	3.9
Couples: wives	65.1	50.9	43.9
	% with decreases		
All	17.9	24.0	30.9
Couples: husbands	43.2	56.7	68.5
Couples: wives	6.3	9.4	13.0

Note: "All" includes single people. Mean pre-reform marginal income tax rates are 22.51 percent (all), 28.58 percent (husbands) and 16.77 percent (wives).
Source: Polimod; see Redmond, Sutherland and Wilson (1998).

rate schedules is that the number of wives with increasing MITRs and the number of husbands with decreasing MITRs both rise (particularly in the German and Spanish joint systems).

Although we have seen that the Spanish system performs relatively well on interfamily distributional grounds, it is particularly weak in terms of its effects on incentives.[25] At the other extreme, the UK system of taxation of couples has little effect on incentives, but is also one of the systems which achieves least in terms of distribution towards children. The following section compares these family tax arrangements with some instruments which directly affect children.

■ 6.3 *Tax measures for children*

The *child tax allowance* which costs the same as the UK system of tax credits for couples and lone parents is £1,560 per child per year. This is worth nothing to non-taxpayers, £6 per child per week to taxpayers with a marginal rate of 20 percent, £6.90 per child per week to standard rate (23 percent) taxpayers and £12 per child per week to top rate (40 percent) taxpayers. This is about two-thirds of the value of the adult personal tax allowance.

A scaling up of the child tax allowance so that it would cost the same as the French family quotient system would, if introduced in the UK, bring it to £8,320 per child per year. This is worth £36.80 per week per child if the parent is a standard rate taxpayer, more than double the size of the adult personal allowance. Clearly, even among current taxpayers, large families with lower income parents would not benefit in full from allowances of this size; they would be lifted clear of income tax, just as are many low-income French families by the "quotient familial".

The two levels of *child benefit increase*, equivalent in cost to the UK and French system of taxation of couples, are £5 and £22 per week per child, respectively. The increases represent a 45 percent and a 199 percent increase in the value of the child benefit for first or only children, respectively (and somewhat more for other children).[26] The child benefit is included in the income assessment for assistance benefits in the UK. In order to abstract from the way the entitlements to these benefits adjust to compensate for changes in the child benefit, they are also increased by £5 or £22 per child.

[25] This statement does not necessarily apply to the actual tax system in Spain.

[26] The total size of the child benefit for first children becomes (i) 90 percent and (ii) nearly double the size of the UK personal tax allowance scaled to (i) the UK system and (ii) the French system. In the 1997/98 system, the child benefit was £9 per child per week, plus £2.05 for the first (or only) child in the family.

Table 13 compares the relative effectiveness of the alternatives in targeting families with children. The top portion of the table considers the effect of the relatively small-scale changes in the child benefit and allowances, compared with the UK tax treatment of couples. The bottom portion of the table shows the effect of the larger scale changes in comparison with the effect of the French family quotient. Clearly, measures directed at children do not affect childless families, and in both cases 100 percent of the child benefit and child tax allowances falls on families with children. All families with children are recipients of the child benefit increase, but only 75 percent are affected by tax allowances, and a similar proportion benefit from the tax credits or the family quotient.

Table 13: *The incidence of alternative tax treatments of children*

	Families with children		
	% gain	% gaining	% received by 50% with highest incomes
Couple + lone-parent credits (UK)	43	77	68
Child benefit + £5 per week	100	100	45
Child tax allowance = £1,560	100	75	70
Family quotient (French system)	73	81	73
Child benefit + £22 per week	100	100	45
Child tax allowance = £8,320	100	75	78

Source: Polimod; see Redmond, Sutherland and Wilson (1998).

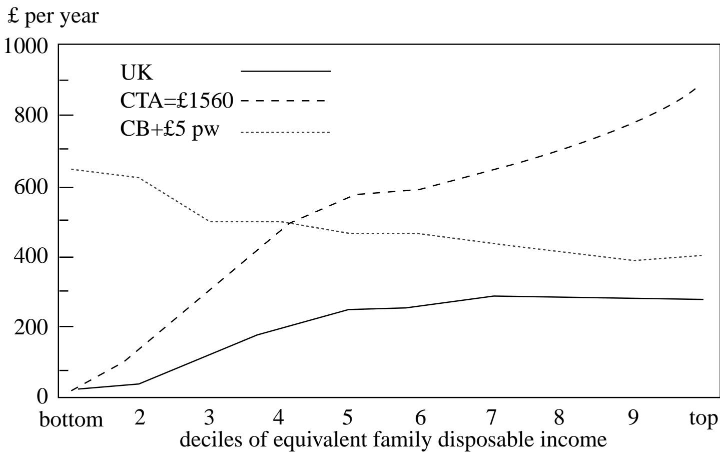
Considering the vertical effects among families with children, less than 50 percent of the child benefit is received by the 50 percent of families with children with the highest incomes.[27] In contrast, child tax allowances disproportionately benefit the more well off (70 percent is received by the top 50 percent in the small-scale version), and this effect is greater, the larger the size of the allowance. (The proportion received by the top half is 78 percent with the larger scale allowance.) The French system of joint taxation benefits a slightly larger proportion of families with children than does the UK system of credits, but the UK system is less sharply targeted at higher income families. Of the amount received by families with children in the UK, 68 percent is received by the top 50 percent, compared to 73 percent under the French system.

The effects across the income distribution are shown graphically (for the small-scale comparison) in Figure 4. The average net gain among families

[27] This is due to the fact that the number of children per family is higher among lower income families.

with children is plotted against the all-family distribution of equivalent family disposable income.[28] The solid line shows the effect of the UK tax credits; the shape is similar to that shown for couples in Figure 2. The value of child tax allowances rises much more steeply with income (dashed line). The dotted line shows that increased benefit payments are of roughly equal value at all income levels. The slight gradient downwards is due to the fact that higher income families have smaller numbers of children.

Figure 4: *Tax measures for children, small-scale changes: average gain among families with children*

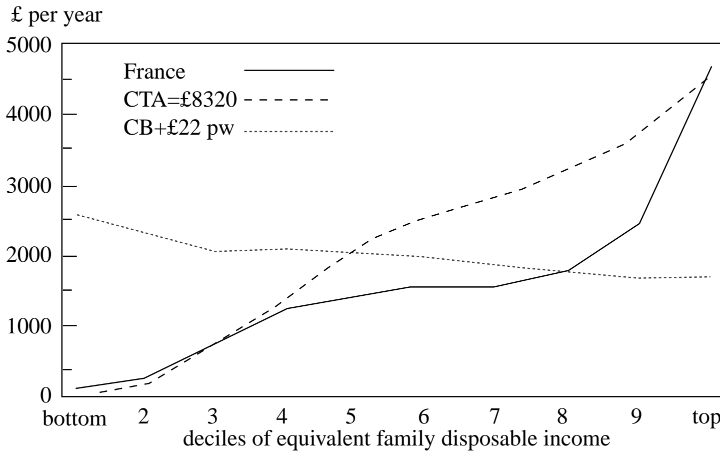


Source: Polimod; see Redmond, Sutherland and Wilson (1998).

In a similar way, Figure 5 shows the distributional effects of the three larger scale variants. The shape of the curves for the child benefit increase and the child tax allowances is very similar to that shown in Figure 4. The effect of the family quotient on families with children is very broadly similar to that of child tax allowances, but it is substantially less generous to the upper-middle range of incomes. Although the two schemes cost the same overall, not all the benefit of the family quotient falls on families with children: childless couples have a quotient of 2. Couples with children in which both spouses earn similar amounts tend to be concentrated in the upper-middle of the UK distribution. These couples gain less than do other couples from joint taxation, and, although they benefit from the child part of the family quotient, this is less valuable than the large-scale child tax allowances.

[28] The proportion of families with children in the all-family deciles is shown in Table 10.

Figure 5: *Tax measures for children, large-scale changes: average gain among families with children*



Source: Polimod; see Redmond, Sutherland and Wilson (1998).

These simulated alternative policies for targeting concessions on families with children illustrate the large effect the form of the concession can have on the vertical distribution of the concession. Tables 4 and 5 show the distribution of *cash* gains. Tax allowances especially benefit the more well off; child benefits have an approximately uniform effect across the distribution of families with children, and measures directed at couples are naturally less well targeted on children, but are of greater benefit to children in more well off families than to children in lower income families.

If the purpose of a family tax concession is to maintain horizontal equity throughout the income distribution, then we would expect the cash value of the concession to rise with income. In proportional terms, the incomes of families with children in the top (all-family) quartile are increased by 7.5 percent on the introduction of the family quotient, whereas incomes in the bottom quartile increase by just 3.7 percent. The figures for (large-scale) child tax allowances are more extreme, with a 10.2 percent increase among the families with children in the top quartile and a 2.6 percent increase in the bottom quartile. On the other hand, the large-scale child benefit increase raises the income of the families with children at the top by 5 percent, in contrast with the 28.3 percent increase at the bottom.

While the child benefit performs excellently on the basis of the redistribution to all children and has a major proportional effect on the incomes of the

poorest families, it is a less effective instrument for ensuring horizontal equity at all income levels. Without defining exactly the relative needs of children and adults or the taxable capacities of families of different types, one cannot judge whether the larger cash gains falling on higher income families under child tax allowances or couple tax concessions are sufficient to maintain horizontal equity. They may indeed be in excess of the required amounts. However, on the theory that families with children should pay proportionately less tax (net of benefits) than should families without children, it is clear that such tax concessions do contribute more to this objective than do universal child benefits.

In some countries a combination of approaches is used to try and go some way towards meeting the objectives of horizontal equity and protection for the living standards of children in poorer families. For example, as shown in Table 4, the German system includes both child benefits and child tax allowances. In fact, by also maintaining optional joint taxation of husband and wife, Germany offers additional indirect support to families in which one spouse is financially dependent. The attractions of this combined approach must be set against the advantages of using all the available resources to finance a single instrument which is capable of meeting one of the objectives fully. Then the question – which we leave open – is whether it is desirable to prioritize equity in tax treatment among families of different types throughout the income distribution, or whether vertical redistribution towards lower income families is a better use of scarce resources.

7. Conclusions

The analysis presented in Sections 5 and 6 can only give partial answers to questions about the relative effects of different approaches to taxation and the family in Europe. Our use of a single population database highlights the effect of particular policy measures. However, as we have seen, whatever effect the measures have is modified by the underlying system and conditions. Modelling actual tax policy and alternatives to it for a set of national populations (that is, using household microdata from those countries) would allow us to take account of underlying differences and to estimate the scale of redistribution accomplished by actual national systems. This requires a consistent approach in each national simulation so that the results are comparable (Callan and Sutherland 1997), and it is the aim of the Euromod project to build a model which can be used for such a purpose (Sutherland 1997b). However, the simulation exercises presented here do provide us with some of

the pieces of the puzzle. By focusing on differences in the approach and structure of income tax systems without confusing these with underlying differences, we are able to come to the following conclusions.

- There is a clear tradeoff between tax concessions for couples in which one spouse is financially dependent and damaging the work incentives of the dependent spouse. Thus, joint taxation systems perform relatively well on interfamily distributional grounds and tend to lower the marginal rate of tax of the higher earner, but they do this is at the expence of increasing the marginal rate of the lower earner.
- Tax systems which offer concessions to couples also tend to benefit families with children disproportionately. The extent of this effect in both size and incidence depends on the form of the concession. The version of the Spanish system of aggregate taxation that we model for the UK is very effective at targeting children, but this is because it claws back tax from high-income couples (who have relatively few children in the UK) and especially benefits couples in the middle of the income distribution (where there is a concentration of UK children). The French family quotient includes a generous factor for children that particularly favours higher income families with children. The transferable allowances in the Netherlands are less well targeted on families with children because they benefit one-earner couples, and in the UK children tend to be concentrated in families with two earners.
- Tax concessions directly focused on children are more efficient in targeting children than are concessions aimed at couples, but the form of the concession has a major impact on the distributional goals the concession can accomplish. Thus, child tax allowances delivered through the UK tax system would not reach one-quarter of the families with children and with incomes below the tax threshold, and their value would increase with income. On the other hand, a universal child benefit is capable of delivering resources to all children. On a proportional basis, the increase in income is greater for poorer children, but a flat rate child benefit cannot maintain horizontal equity at all income levels.
- The progressivity of the income tax schedule increases the distributional effects of joint taxation and allowances for children. Thus, under a more progressive tax structure not only do these instruments generally cost more, but they are of greater proportional benefit to higher income taxpayers.

A wide range of tax instruments is available to account for marriage and the presence of children. These instruments are used in varying combinations and to varying extents across the European Union. We have attempted to generalize the different systems into four groups on the basis of the types of combinations of tax instruments that are used (Table 7). However, the categorization

is quite loose (and could be debated), indicating the lack of clear direction or consensus within groups of similar countries or across Western Europe as a whole. The development of national tax systems can be seen as the result of a series of historical accidents and compromises as much as the product of a principled design. This also applies to the division of instruments for family redistribution between those instruments which work through the income tax system and those channelled through the system of cash or in-kind benefits.

The availability of a choice of treatment within the tax system – of the transferability of allowances, of opting between independent and joint taxation, or of claiming a concession as a tax credit or as a cash benefit – can be seen as a reflection of uncertainties about the nature of horizontal equity. Leaving the choice to families themselves means that the tax system can be viewed as being less prescriptive about behaviour. At the same time, offering a choice also increases the potential for inequitable treatment within and among families and higher compliance and administrative costs.

The wide variation in actual practices, combined with the general ambiguity surrounding the issue of neutrality in the tax system, makes the task of drawing clear lessons from the tax systems of Western Europe difficult for countries in the process of designing new systems. Although there is no set of blueprints for the design of a child- or parent-friendly income tax system, there are a number of guidelines that can be drawn out from our analysis.

- The incomes of families can be enhanced through the income tax system by direct mechanisms (such as tax allowances) or by indirect means (such as tax reliefs for the expenditures common among families with children). It is the combined effects of all instruments that determines the relative tax burdens of families in different circumstances.
- The impact of income tax systems should be judged in combination with the other parts of the tax-benefit system, as well as in isolation. Indeed, highly redistributive systems can include "large" income tax systems, with few family concessions, financing an extensive range of family benefits and services. Conversely, "small" income tax systems, with proportionately large concessions to families, may be seen, in isolation, as making a large contribution to horizontal equity, while, when considered in combination with other parts of the system that make minimal family concessions (such as indirect tax or social insurance contributions), they may achieve only a modest amount of redistribution.
- Our conclusions about the vertical effects of the alternative policies we consider are highly dependent on the underlying conditions of the UK population and the nature of the UK tax schedule and tax base. The location of children in the all-family distribution, the prevalence of two-earner couples among

families with children and the fact that around 25 percent of families with children have incomes too low to be taxed, combined with the relatively unprogressive nature of the remainder of the tax schedule, are all important influences on our simulation results. Other combinations of factors for other countries might yield different conclusions. The design of family-related components of national tax systems should take account of these underlying factors.

● Child welfare can be targeted through the tax treatment of couples or through measures directed at children themselves. On the one hand, measures which benefit one-earner couples can be seen as encouraging or permitting one parent (in a couple) to spend time caring for children rather than earning an independent income. On the other hand, systems which incorporate independent taxation and offer family concessions targeted directly at children tend to expect mothers to maintain an independent income throughout most of their adult lives.

● On the assumption that child welfare is likely to be best served by increasing the resources of mothers, we can draw the following conclusions.

i. Couples should be taxed independently, or, if taxation is joint, it should be administered in such a way as to deduct no more tax from the mother than would be the case if she were the main or sole earner.

ii. Child concessions should be paid to the mother in the first instance. Tax allowances which are not refundable can only be of use to the family if the person to whom they are allocated has sufficient taxable income to set against them. Thus, under joint taxation the family as a whole may benefit, but the cash is likely to be channelled through the father's income. Under independent taxation the family benefits to the greatest degree if the parent to whom the allowance is allocated has the higher income or if the allowance is transferable between spouses.

iii. However, transferability – either of adult allowances, or of child allowances – has adverse effects on the work incentives of the lower income spouse.

iv. In the case of child benefits (or allowances and credits which are refundable to non-taxpayers), payment to the mother does not compromise the impact of the measure on family incomes.

Annexe 1: Family-related Tax Instruments

This annexe defines the principal features of income tax systems and shows how they can account for different family circumstances.

Two important distinctions should be made. First, there is a distinction between the allowances or deductions subtracted from the tax base and those subtracted after the tax calculation (tax credits). In the former case, the value of the allowance depends on the taxpayer's marginal tax rate. In the latter case, the deduction or credit is allowed at a flat rate which does not depend on the marginal rate. In a progressive system (with marginal rates which rise with income) allowances are worth more to higher income taxpayers than they are to taxpayers with lower incomes. Some tax credits are *refundable*, which means that they are received in cash by people with incomes lower than the tax threshold (non-taxpayers).

Second, there is a distinction between concessions which are generally applied – deductions depending on general status (such as parenthood) – and those which relate to particular expenditures (such as childcare costs). The former apply in the same way to all families of the same type and income. The latter also depend on individual choices about participation and consumption. We focus mainly on the general allowances, while recognizing that the distinction may not always be clear-cut and that tax *expenditures* may have a very significant effect on relative tax burdens.

Tax base

The tax base defines the incomes which are taxable. Horizontal objectives can be achieved by exempting income which is family contingent, for example through government transfers to the adult and child dependants of social benefit claimants and through child benefits.

Tax unit

Under independent taxation, the incomes of individuals are assessed separately. This is shown in equation (1), where the tax schedule "T" is applied independently to the incomes "Y_M" (male) and "Y_F" (female) of the couple.

$$(1)\quad Tax = T(Y_M) + T(Y_F) \qquad \text{(independent taxation)}$$

The concept of joint taxation can be divided into aggregate, *split* and *quotient* taxation (see Meulders 1986). Equation (2) summarizes the way aggre-

gate taxation works. The incomes "Y_M" and "Y_F" of the individuals are added, and the total is taxed as if the unit were a single individual. Aggregate taxation is usually accompanied by larger tax allowances, bands and credits for couples.

(2) $Tax = T\,(Y_M + Y_F)$ (aggregate taxation)

Split taxation and family quotient taxation are related. Both involve the aggregation of income within the tax unit. Total taxable income is divided by a *family quotient* and then applied to the tax schedule in the same manner as for a single person. Total tax for the unit is found by multiplying this calculated tax by the family quotient.

In the case of the splitting method, in equation (3) the family quotient has the value "2". In other words, the couple's income is added and divided by 2.[29]

(3) $Tax = 2 \times T\,((Y_M + Y_F)\,/2)$ (split taxation)

Joint taxation and income splitting do not take into account the presence of children. The family quotient method includes dependent children in the calculation whether or not the children have incomes contributing to the family tax base. For families without children, the quotient method is equivalent to split taxation. Equation (4) outlines the way the tax calculation is carried out. The income from both spouses is added to the income from "D" dependants. The tax base, divided by the quotient, "Q", is applied to the individual tax schedule. The resulting tax amount is multiplied by the quotient to arrive at the family tax liability.

(4) $Tax = Q \times T\,((Y_M + Y_F + \sum_{1}^{D} Y_i)\,/\,Q)$ (family quotient taxation)

The value of the quotient itself could in principle be calculated in any way (it could simply be the number of people in the family). Section 5 explains how it is calculated in France: essentially, the quotient is increased by 1 or 0.5 for each extra child depending on the family structure.

Joint taxation may be compulsory or optional. Multi-person tax units may opt for joint taxation if, as a couple (or family), they pay less tax than they would if they were assessed individually. It is also possible for the unit of assessment (and the method of joint assessment) to depend automatically on the level of income. In addition, different categories of income could be taxed

[29] Income splitting is exactly equivalent to an aggregation method in the case in which all bands and allowances are doubled.

using different tax units. For instance, depending on the way income tax is collected, it may make sense for incomes from investment to be taxed on an individual basis (at source), while earned incomes are taxed jointly. Conversely, it may make sense for investment income to be taxed jointly, while earned income is taxed separately.

Tax allowances

Tax allowances are amounts subtracted from the tax base to arrive at the income on which tax is levied. As explained above, the value of the tax allowances depends on the marginal rate of taxation. Typically, an individual tax allowance is one of the main pillars of a progressive income tax system. In addition, extra tax allowances may be given to families with children, single parents or couples with one earner. In some cases, the unused allowances of a married person with a small or zero income of their own may be transferred to their spouse. The conditions for such a transfer may vary from an all-or-nothing annual decision by the couple to a continuous adjustment process designed to minimize total tax. The precise impact of transferability depends on these conditions.

It is also possible for allowances to apply to certain types of income (such as earnings) and not to all income.

Tax schedule

The tax schedule is the set of thresholds and tax rates that determines the amount of tax collected from a specific taxable income. Tax allowances can be considered part of the schedule since they can be thought of as "zero-rate tax bands". Income tax schedules are usually progressive in that lower incomes face lower marginal rates and lower average rates of tax.

The purpose of tax schedules is primarily to achieve vertical redistribution, although the tax schedule can be modified for particular family types. Examples include transferable allowances, which increase the width of the zero-rate band for one-earner couples, widened tax bands for couples in aggregate taxation, and the use of exemption limits which vary by family type. This last example is essentially an alternative tax schedule (used only in Ireland) designed to keep low-income tax units out of the tax net. The exemption limit is set higher than the tax allowance, and the level of the limit depends on family composition. No tax is paid on taxable income below the limit, but, once the tax exemption limit is exceeded, taxes are paid according to the standard schedule. To avoid the tax kink at the exemption limit, mar-

ginal relief can be used to smooth out the tax paid.[30] Tax exemptions are administratively quite simple in that those people earning less than the exemption limit pay no tax. They are also a way of keeping people out of the tax net that is cheaper than tax allowances, and in principle they can be targeted on specific family types. However, such targeting occurs at the cost of increased marginal income tax rates at low levels of income.

Tax credits and fixed rate reliefs

Tax credits are amounts which are subtracted once gross taxes have been calculated. They are similar to tax allowances, but, for people with gross tax liabilities at least as large as the credit, their value does not depend on income.[31] The size of tax credits often varies according to family size, family composition or marital status, and the credits may be transferable between spouses in a manner similar to tax allowances. Tax reliefs for particular kinds of expenditure may also be limited to a fixed proportion of the value of the expenditure, so that the rate of relief is the same for all taxpayers, regardless of income.

People with very small gross tax liability may not benefit to the full value of the credit or relief. Tax credits and reliefs which are refundable overcome this problem and also benefit people who have incomes below the income tax threshold. Typically, refundable tax credits are paid in cash (and may be, from the recipient's point of view, indistinguishable from cash transfers paid out of the public expenditure budget), and refundable reliefs are allowed at source (as reductions in the size of payments).

[30] Any income earned over the exemption limit is taxed at the marginal relief rate until the tax paid under marginal relief is equal to the tax paid under the standard system; then the taxpayer reverts to the standard system.

[31] However, in some countries the size of the tax credit is independently related to income.

Annexe 2: Dependency Assumptions in EU Income Tax Systems

	Definition of dependent child	Tax filing	Treatment of cohabiting couples
Austria	Under 19; under 27 if student with low earnings; low earnings if disabled	Individual	As individuals
Belgium	No age limit; must earn less than a fixed amount	Individually, but on the same form	As individuals
Denmark	Not applicable	Individual	As individuals
Finland	Under 18 during tax year	Individual	As individuals
France	Under 21; under 25 if student; any age if disabled or in military service	Joint	Joint
Germany	Under 19; under 27 if student	Separate; if splitting is used, then joint	As individuals
Greece	Under 19; under 23 if student; no age limit if disabled	Joint	As individuals
Ireland	Under 16, student or disabled		As individuals
Italy	Under 18; under 26 if student	Individual	As individuals
Luxembourg	Under 21 (depends on income of parents); under 27 if student; all handicapped		Joint
Netherlands	Under 27 and supported "to an important extent" (relevant for single-parent allowance)	Individual, but with information about the other spouse	Individual, with potential transfer of allowance between partners
Portugal	Under 16 if income is less than minimum wage; under 25 if full-time student or disabled	Joint	As individuals
Spain	Under 18 living in the family; under 30 with income below a limit	No compulsory joint filling, but necessary if joint taxation is used	As individuals
Sweden	Not applicable	Individual	As individuals
UK	Under 16; under 19 if full-time non-advanced student (relevant for single-parent allowance)	Individual	As individuals

Sources: Responses to the Euromod Income Tax Questionnaire, Jepsen et al. (1997).

Annexe 3: The 1997/98 UK Income Tax System and an Alternative Progressive Tax Schedule

Tax base

The tax base is broad, containing most sources of non-social security income and many of the main social security transfers as well. Most unearned income is taxed through the same schedule as earned income. The main deduction is occupational and private pension contributions. State social insurance contributions are not deductible.

Tax reliefs

The main reliefs are for mortgage interest (on capital borrowed up to £30,000), at a flat rate of 15 percent, and for life insurance premiums on policies taken out before 1984, at a rate of 12.5 percent.

Tax schedule 1997/98, with elements directly related to marriage or parenthood removed

Personal allowance	£4,045
Personal allowance (aged 65-74)*	£5,220
Personal allowance (aged 75+)*	£5,400
Rate	*Up to*
20 percent	£4,100
23 percent	£26,100
40 percent	—

Alternative progressive schedule

Personal allowance	£5,045
Personal allowance (aged 65-74)*	£6,220
Personal allowance (aged 75+)*	£6,400
Rate	*Up to*
20 percent	£4,100
23 percent	£15,000
30 percent	£25,100
40 percent	£30,000
50 percent	—

*Age allowances are income related. Taxable income over £15,600 per year reduces the excess of the age allowance over the standard personal allowance by £0.50 per £1.00.

References

Atkinson, A.B., F. Bourguignon and P.-A. Chiappori (1988), "What Do We Learn about Tax Reform from International Comparisons?: France and Britain". *European Economic Review*, 32, pages 343-52.

Atkinson, A.B. and H. Sutherland (1983), "Hypothetical Families in the DHSS Tax/Benefit Model and Families in the Family Expenditure Survey 1980". *Research Notes*, 1. London: Economic and Social Research Council Taxation Incentives and Distribution of Income Programme, London School of Economics.

Bernardi, L. (1989), "Per un'introduzione al dibattito sul sistema tributario italiano e alle proposte di reforma". In A. Predone (ed.), *La questione tributaria*. Bologna: Il Mulino.

Bourguignon, F., C. O'Donoghue, J. Sastre-Descals, A. Spadaro and F. Utili (1997), "Eur3: A Prototype European Tax-Benefit Model". *Microsimulation Unit Discussion Papers*, No. MU9703. Cambridge, UK: Department of Applied Economics, University of Cambridge.

Bradshaw, J., S. Kennedy, M. Kilkey, S. Hutton, A. Corden, T. Eardley, H. Holmes and J. Neale (1996), *Policy and the Employment of Lone Parents in 20 Countries: The EU Report*. York, UK: European Observatory on National Family Policies, Social Policy Research Unit, University of York.

Callan, T. and H. Sutherland (1997), "The Impact of Comparable Policies in European Countries: Microsimulation Approaches". *European Economic Review*, Vol. 41, No. 3-5, pages 627-33.

Department of Social Security (1988), "An Examination of Taxation Arrangements for Couples with Children: Evaluating the Options of Income Splitting". *Social Security Review Discussion Papers*, No. 23. Canberra: Department of Social Security.

Eurostat (1997), *Labour Force Survey: Results 1995*. Luxembourg: Office for Official Publications of the European Communities.

Goode, J., C. Callender and R. Lister (1998), *Purse or Wallet?: Gender Inequalities and Income Distribution within Families on Benefits*. London: Policy Studies Institute.

House of Lords (1985), "Income Taxation and Equal Treatment for Men and Women". Select Committee on the European Communities, Session 1985-86, 1st Report, HL15. London: HMSO.

Jepsen, M., D. Meulders, O. Plasman and P. Vanhuynegem (1997), *Individualization of the Social and Fiscal Rights and the Equal Opportunities between Women and Men*. Brussels: Département d'Economie Appliquée, Université Libre-Bruxelles.

Lundberg, S.J., R.A. Pollak and T.J. Wales (1997), "Do Husbands and Wives Pool Their Resources?: Evidence from the UK Child Benefit". *Journal of Human Resources*, Vol. 32, No. 3 (Summer), pages 462-80.

McClements, D. (1977), "Equivalence Scales for Children". *Journal of Public Economics*, Vol. 8, pages 191-210.

Meulders, D. (1986), *Income Tax in the European Community*. London: Institute for Fiscal Studies.

Millar, J. and A. Warman (1996), *Family Obligations in Europe*. London: Family Policy Studies Centre.

OECD (1993), *Taxation in OECD Countries*. Paris: Organization for Economic Cooperation and Development.

OECD (1995), "Taxation, Employment and Unemployment: The OECD Jobs Study". Paris: Organization for Economic Cooperation and Development.

OECD (1997), *National Accounts*, Vol. II. Paris: Organization for Economic Cooperation and Development.

Pechman, J.A. and G.V. Engelhardt (1990), "The Income Tax Treatment of the Family: An International Perspective". *National Tax Journal*, Vol. 43, No. 1, pages 1-32.

Redmond, G., H. Sutherland and M. Wilson (1998), *The Arithmetic of Tax and Social Security Reform: A User's Guide to Microsimulation Methods and Analysis*. Cambridge, UK: Cambridge University Press.

Ruxton, S. (1996), *Children in Europe*. London: NCH Action for Children.

Sutherland, H. (ed.) (1997a), "The Euromod Preparatory Study: A Summary Report". *Microsimulation Unit Discussion Papers*, No. MU9705. Cambridge, UK: Microsimulation Unit, Department of Applied Economics, University of Cambridge.

Sutherland, H. (ed.) (1997b), "Euromod, a European Benefit Tax Model and Social Integration: Preparatory Study, Final Report to the European Commission". Cambridge, UK: Department of Applied Economics, University of Cambridge.

Sutherland, H. (1997c), "Women, Men and the Redistribution of Income". *Fiscal Studies*, Vol. 18, No. 1, pages 1-22.

Innocenti Occasional Papers
Economic and Social Policy Series

The papers in the series (ISSN 1014-7837) are all available in English. Individual copies are available from: Distribution Unit, UNICEF-ICDC, Piazza SS. Annunziata 12, 50122 Florence, Italy (e-mail: orders@unicef-icdc.it – fax: +39 055-24-48-17).

EPS 1 *Economic Decline and Child Survival: The Plight of Latin America in the Eighties*. Teresa Albanez, Eduardo Bustelo, Giovanni Andrea Cornia and Eva Jespersen. (March 1989).

EPS 2 *Child Poverty and Deprivation in Industrialized Countries: Recent Trends and Policy Options*. Giovanni Andrea Cornia. (March 1990). Also available in French and Spanish.

EPS 3 *Education, Skills and Industrial Development in the Structural Transformation of Africa*. Sanjaya Lall. (July 1990).

EPS 4 *Rural Differentiation, Poverty and Agricultural Crisis in Sub-Saharan Africa: Toward An Appropriate Policy Response*. Giovanni Andrea Cornia and Richard Strickland. (July 1990).

EPS 5 *Increased Aid Flows and Human Resource Development in Africa*. Paul Mosley. (August 1990).

EPS 6 *Child Poverty and Deprivation in Italy: 1950 to the Present*. Chiara Saraceno. (September 1990). Also available in Italian.

EPS 7 *Toward Structural Transformation with a Human Focus: The Economic Programmes and Policies of Zambia in the 1980s*. Venkatesh Seshamani. (October 1990).

EPS 8 *Child Poverty and Deprivation in the UK*. Jonathan Bradshaw. (October 1990).

EPS 9 *Adjustment Policies in Tanzania, 1981-1989: The Impact on Growth, Structure and Human Welfare*. Jumanne H. Wagao. (October 1990).

EPS 10 *The Causes and Consequences of Child Poverty in the United States*. Sheldon Danziger and Jonathan Stern. (November 1990).

EPS 11 *The Fiscal System, Adjustment and the Poor*. Giovanni Andrea Cornia and Frances Stewart. (November 1990).

EPS 12 *The Health Sector and Social Policy Reform in the Philippines since 1985*. Wilfredo G. Nuqui. (January 1991).

EPS 13 *The Impact of Economic Crisis and Adjustment on Health Care in Mexico*. Carlos Cruz Rivero, Rafael Lozano Ascencio and Julio Querol Vinagre. (February 1991).

EPS 14 *Structural Adjustment, Growth and Welfare: The Case of Niger, 1982-1989*. Kiari Liman-Tinguiri. (March 1991).

EPS 15 *The Impact of Self-Imposed Adjustment: The Case of Burkina Faso, 1983-1989*. Kimseyinga Savadogo and Claude Wetta. (April 1991).

EPS 16 *Liberalization for Development: Zimbabwe's Adjustment without the Fund*. Robert Davies, David Sanders and Timothy Shaw. (May 1991).

EPS 17 *Fiscal Shock, Wage Compression and Structural Reform: Mexican Adjustment and Educational Policy in the 1980s*. Fernando Valerio. (June 1991).

EPS 18 *Patterns of Government Expenditure in Developing Countries during the 1980s: The Impact on Social Services*. Beth Ebel. (July 1991).

EPS 19 *Ecuador: Crisis, Adjustment and Social Policy in the 1980s*. The Ecuadorian Centre of Social Research. (August 1991).

EPS 20 *Government Expenditures for Children and Their Families in Advanced Industrialized Countries, 1960-85*. Sheila B. Kamerman and Alfred J. Kahn. (September 1991).

EPS 21 *Is Adjustment Conducive to Long-term Development?: The Case of Africa in the 1980s*. Giovanni Andrea Cornia. (October 1991).
EPS 22 *Children in the Welfare State: Current Problems and Prospects in Sweden*. Sven E. Olsson and Roland Spånt. (December 1991).
EPS 23 *Eradicating Child Malnutrition: Thailand's Health, Nutrition and Poverty Alleviation Policy in the 1980s*. Thienchay Kiranandana and Kraisid Tontisirin. (January 1992).
EPS 24 *Child Welfare and the Socialist Experiment: Social and Economic Trends in the USSR, 1950-90*. Alexandr Riazantsev, Sándor Sipos and Oleg Labetsky. (February 1992).
EPS 25 *Improving Nutrition in Tanzania in the 1980s: The Iringa Experience*. Olivia Yambi and Raphael Mlolwa. (March 1992).
EPS 26 *Growth, Income Distribution and Household Welfare in the Industrialized Countries since the First Oil Shock*. Andrea Boltho. (April 1992).
EPS 27 *Trends in the Structure and Stability of the Family from 1950 to the Present: The Impact on Child Welfare*. Chiara Saraceno. (May 1992).
EPS 28 *Child Poverty and Deprivation in Portugal: A National Case Study*. Manuela Silva. (June 1992).
EPS 29 *Poverty Measurement in Central and Eastern Europe before the Transition to the Market Economy*. Sándor Sipos. (July 1992).
EPS 30 *The Economics of Disarmament: Prospects, Problems and Policies for the Disarmament Dividend*. Saadet Deger. (August 1992).
EPS 31 *External Debt, Fiscal Drainage and Child Welfare: Trends and Policy Proposals*. Stephany Griffith-Jones. (September 1992).
EPS 32 *Social Policy and Child Poverty: Hungary since 1945*. Júlia Szalai. (October 1992).
EPS 33 *The Distributive Impact of Fiscal and Labour Market Policies: Chile's 1990-1 Reforms*. Mariana Schkolnik. (November 1992).
EPS 34 *Changes in Health Care Financing and Health Status: The Case of China in the 1980s*. Yu Dezhi. (December 1992).
EPS 35 *Decentralization and Community Participation for Improving Access to Basic Services: An Empirical Approach*. Housainou Taal. (January 1993).
EPS 36 *Two Errors of Targeting*. Giovanni Andrea Cornia and Frances Stewart. (March 1993).
EPS 37 *Education and the Market: Which Parts of the Neoliberal Solution are Correct?*. Christopher Colclough. (July 1993).
EPS 38 *Policy and Capital Market Constraints to the African Green Revolution: A Study of Maize and Sorghum Yields in Kenya, Malawi and Zimbabwe, 1960-91*. Paul Mosley. (December 1993).
EPS 39 *Tax Reforms and Equity in Latin America: A Review of the 1980s and Proposals for the 1990s*. Ricardo Carciofi and Oscar Cetrángolo. (January 1994).
EPS 40 *Macroeconomic Policy, Poverty Alleviation and Long-term Development: Latin America in the 1990s*. Giovanni Andrea Cornia. (February 1994).
EPS 41 *Réformes Fiscales, Génération de Ressources et Equité en Afrique Subsaharienne durant les Années 1980*. Kiari Liman-Tinguiri. (March 1994). Available in French.
EPS 42 *Tax Reform and Equity in Asia: The Experience of the 1980s*. Andrea Manuelli. (April 1994).
EPS 43 *Family Support Policies in Transitional Economies: Challenges and Constraints*. Gáspár Fajth. (August 1994).
EPS 44 *Income Distribution, Poverty and Welfare in Transitional Economies: A Comparison between Eastern Europe and China*. Giovanni Andrea Cornia. (October 1994).
EPS 45 *Death in Transition: The Rise in the Death Rate in Russia since 1992*. Jacob Nell and Kitty Stewart. (December 1994).

EPS 46 *Child Well-being in Japan: The High Cost of Economic Success*. Martha N. Ozawa and Shigemi Kono. (March 1995).
EPS 47 *Ugly Facts and Fancy Theories: Children and Youth during the Transition*. Giovanni Andrea Cornia. (April 1995).
EPS 48 *East Joins West: Child Welfare and Market Reforms in the "Special Case" of the Former GDR*. Bernhard Nauck and Magdalena Joos. (June 1995).
EPS 49 *The Demographic Impact of Sudden Impoverishment: Eastern Europe during the 1989-94 Transition*. Giovanni Andrea Cornia and Renato Paniccià. (July 1995).
EPS 50 *Market Reforms and Social Welfare in the Czech Republic: A True Success Story?*. Miroslav Hiršl, Jiří Rusnok and Martin Fassmann. (August 1995).
EPS 51 *The Winding Road to the Market: Transition and the Situation of Children in Bulgaria*. Theodora Ivanova Noncheva. (August 1995).
EPS 52 *Child Institutionalization and Child Protection in Central and Eastern Europe*. Mary Anne Burke. (September 1995).
EPS 53 *Economic Transition in the Baltics: Independence, Market Reforms and Child Well-being in Lithuania*. Romas Lazutka and Zita Sniukstiene. (September 1995).
EPS 54 *Economic Reforms and Family Well-being in Belarus: Caught between Legacies and Prospects*. Galina I. Gasyuk and Antonina P. Morova. (December 1995).
EPS 55 *The Transition in Georgia: From Collapse to Optimism*. Teimuraz Gogishvili, Joseph Gogodze and Amiran Tsakadze. (September 1996).
EPS 56 *Children at Risk in Romania: Problems Old and New*. Elena Zamfir and Cătălin Zamfir. (September 1996).
EPS 57 *Children in Difficult Circumstances in Poland*. Stanislawa Golinowska, Bożena Balcerzak-Paradowska, Bożena Kołaczek and Dorota Głogosz. (December 1996).
EPS 58 *The Implications of Exhausting Unemployment Insurance Entitlement in Hungary*. John Micklewright and Gyula Nagy. (September 1997).
EPS 59 *Are Intergovernmental Transfers in Russia Equalizing?*. Kitty Stewart. (September 1997).
EPS 60 *Marital Splits and Income Changes: Evidence for Britain*. Sarah Jarvis and Stephen P. Jenkins. (September 1997).
EPS 61 *Decentralization: A Survey from a Child Welfare Perspective*. Jeni Klugman. (September 1997).
EPS 62 *Living Standards and Public Policy in Central Asia: What Can Be Learned from Child Anthropometry?*. Suraiya Ismail and John Micklewright. (November 1997).
EPS 63 *Targeting Social Assistance in a Transition Economy: The Mahallas in Uzbekistan*. Aline Coudouel, Sheila Marnie and John Micklewright. (August 1998).
EPS 64 *Income Inequality and Mobility in Hungary, 1992-96*. Péter Galasi. (August 1998).
EPS 65 *Accounting for the Family: The Treatment of Marriage and Children in European Income Tax Systems*. Cathal O'Donoghue and Holly Sutherland. (September 1998).

The UNICEF International Child Development Centre (ICDC) in Florence, Italy, is an international knowledge base and training centre focusing on the rights of children. It was established in 1988 to strengthen the capacity of UNICEF and its cooperating institutions to promote a new global ethic for children and to respond to their evolving needs. A primary objective of the Centre is to encourage the effective implementation of the 1989 United Nations Convention on the Rights of the Child (CRC) in both developing and industrialized countries.

- Information management is at the heart of the Centre's approach. The Centre systematically filters existing information and its own research results to produce key findings, policy studies and case materials on key aspects relating to children's rights.
- Research, particularly to explore both critical and front-line issues, is carried out to further the understanding, development and monitoring of children's rights. Special attention is paid to problems of equity, economic affordability and the financing of social programmes to benefit children.
- Capacity building is the third important component of ICDC's activities. The emphasis is on improving understanding of the principles of the CRC to enable UNICEF staff to promote its implementation more effectively.

The Centre disseminates the results of its activities through seminars, training workshops and publications targeted at executive decision-makers, programme managers, researchers and other practitioners in child-related fields, both inside and outside UNICEF. The government of Italy has provided core funding for the Centre since its establishment, and other governments, international institutions and private organizations have provided supplementary funds for specific projects. The Centre benefits from the counsel of an International Advisory Committee, chaired by UNICEF's Executive Director.

All correspondence should be addressed to:
UNICEF
International Child Development Centre
Economic and Social Policy Programme
Piazza SS. Annunziata 12
50122 - Florence / Italy
Tel. + 39 055.23.45.258
Fax + 39 055.24.48.17
E-mail: ciusco@unicef-icdc.it
For orders: orders@unicef-icdc.it
www.unicef-icdc.org